

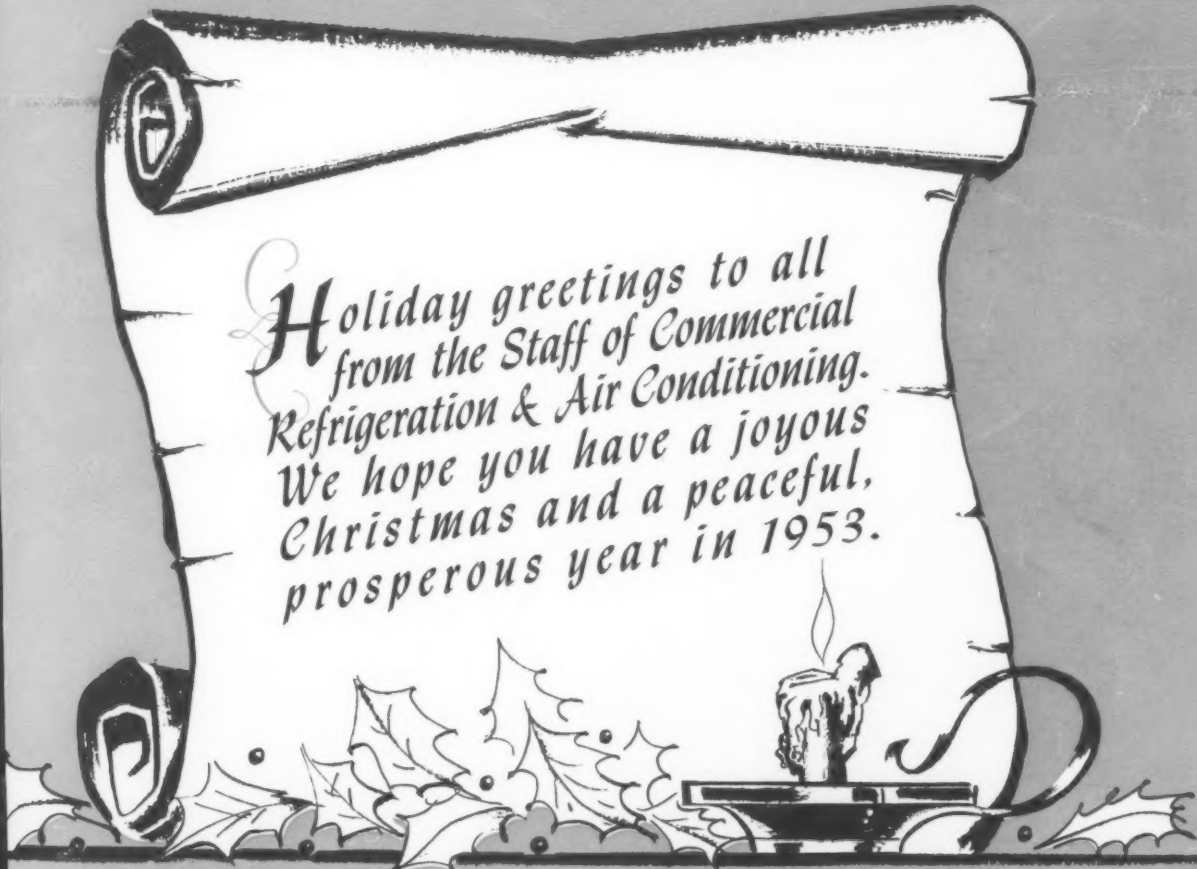
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DECEMBER 1952

COMMERCIAL REFRIGERATION & AIR CONDITIONING

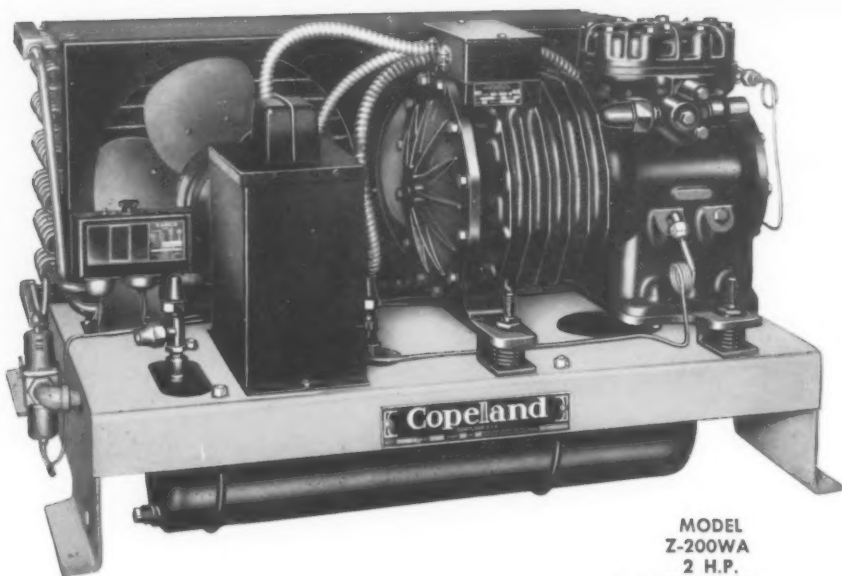


*Holiday greetings to all
from the Staff of Commercial
Refrigeration & Air Conditioning.
We hope you have a joyous
Christmas and a peaceful,
prosperous year in 1953.*

MERCHANDISING, SELLING, INSTALLATION AND MAINTENANCE OF
AIR CONDITIONING AND COMMERCIAL REFRIGERATION EQUIPMENT

There's Added Value in COPELAMETIC

THE *Accessible* HERMETIC



MODEL
Z-200WA
2 H.P.
Air-Water Combination
COPELAMETIC

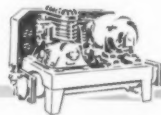
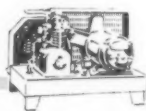
The big, dollar-saving extra in Copelametic refrigeration units is accessibility. The elimination of belts, seals and manual oiling cut service needs 90%. But Copeland engineers went a long step forward by adding the practical feature of accessibility. They made it possible for the service men to take care of parts replacement and adjustments

right on the spot, when the rare occasion arose.

Air-cooled, remote COPELAMETICS range from $\frac{1}{4}$ H.P. through 3 H.P. There are water-cooled, remote units from $\frac{1}{3}$ H.P. to $7\frac{1}{2}$ H.P. inclusive. There are self-contained COPELAMETICS for all applications.



Copeland
DEPENDABLE *Electric* REFRIGERATION



REFRIGERATION UNITS (OPEN - TYPE AND COPELAMETIC); WATER COOLERS

COPELAND REFRIGERATION CORPORATION • SIDNEY, OHIO

Circle No. 1 on Reader Service Card for more information



smaller
than your
FIST

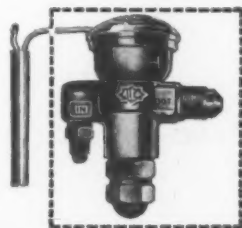
that's all the space you need for an
ALCO 402

This compact Thermo Expansion Valve is designed for freezers and display cases where space is at a premium.

Liquid charge permits mounting valve anywhere in any position.

Pressure limiting for motor protection. Wide range super-heat adjustment.

SEND FOR OUR BULLETIN 402 AND SEE
YOUR ALCO WHOLESALE.



3 Sizes

- 402-1 — up to 1/4 ton "F-12" or 1/2 ton Methyl Chloride
- 402-2 — up to 1/2 ton "F-12" or 1 ton Methyl Chloride
- 402-4 — up to 1 ton "F-12" or 2 tons Methyl Chloride



Designers and Manufacturers
of Thermostatic Expansion
Valves; Evaporator Pressure
Regulators; Solenoid Valves;
Float Valves; Float Switches.

ALCO VALVE CO.

843 KINGSLAND AVE. • ST. LOUIS 5, MO.

5326

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and **AIR CONDITIONING • DECEMBER, 1952**



"... and for air conditioning, we'll insist on Honeywell Controls"

Sure looks like cartoonist Tom Henderson's couple are rushing things. But "newly marrieds" are often like that!

It's hard to tell how their new home will look, but it's a certainty it will be blissfully comfortable, for they wisely decided to insist on Honeywell Controls for their air conditioning system.

The plain fact is—there's no better guarantee of dependable, trouble-free operation than the name Honeywell on the automatic controls for air conditioning and refrigeration.

So make your first choice Honeywell Controls—

the first choice of architects, builders and consumers. For full information—or an 8½" x 9" personalized reproduction of this Henderson cartoon—write today to Honeywell, Dept. CR-12-113, Minneapolis 8, Minnesota. In Canada, Toronto 17, Ontario.

MINNEAPOLIS
Honeywell

First in Controls



Circle No. 3 on Reader Service Card for more information

DECEMBER, 1952 • COMMERCIAL REFRIGERATION

DECEMBER, 1952

VOLUME 9, No. 12

COMMERCIAL REFRIGERATION & AIR CONDITIONING

Established 1944 as
THE REFRIGERATION INDUSTRY

THIS MAGAZINE has no
official affiliation with ANY
group, society or association.

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Fleet Street

and AIR CONDITIONING

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**What the
serviceman
should know
about "VIRGINIA"
REFRIGERATION
products**

EXTRA DRY ESOTOO (bp +14°F.)

The refrigeration grade SO₂ that service and maintenance engineers have endorsed for more than 20 years. Comes in all popular cylinder sizes.

V-METH-L (bp -10.7°F.)

"Virginia" Methyl Chloride is made specifically for refrigeration use. Its low moisture content, low acidity and narrow boiling range meet the most exacting requirements.

"VIRGINIA" DISTRIBUTES...

"FREON" REFRIGERANTS
(a product of "Kinetic" Chemicals)

"FREON-113" (bp 117.6°F.) "FREON-114" (bp 38.0°F.) "FREON-11" (bp 74.7°F.)

"FREON-12" (bp -21.6°F.) "FREON-22" (bp -41.4°F.)

**SUNISO REFRIGERATION OILS
PERMAGUM SEALING COMPOUND
PRESSTITE INSULATION TAPE**

**TO CHARGE A SYSTEM, USE REFRIGERANTS THAT ARE
CONSISTENTLY PURE, CONSISTENTLY SURE**

**V-METH-L...
WORLD-RENOWNED FOR QUALITY**

Recharging with "Virginia" Methyl Chloride is a painless way to get rid of your refrigeration troubles. V-Meth-L is made specifically for refrigeration purposes... is consistently pure. The contents of each cylinder is tested and retested to maintain the high quality that has made V-Meth-L world renowned. Remember, the use of a good refrigerant is the first step in preventing costly and time-consuming call-backs due to sludging, copper plating, frozen expansion valves, and other troubles caused by impure refrigerants.



VIRGINIA
Refrigerants

**ASK YOUR WHOLESALER
OR WRITE
VIRGINIA SMELTING
COMPANY**

WEST NORFOLK, VIRGINIA

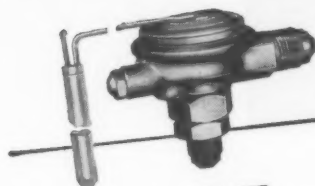
PHILADELPHIA • NEW YORK • BOSTON
CHICAGO • DETROIT • ATLANTA

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DECEMBER, 1952 • COMMERCIAL REFRIGERATION

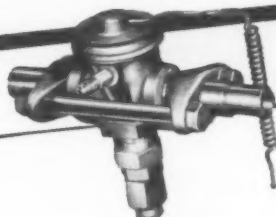
Simplify Buying and Inventory **DEAL** with **DETROIT**

and take advantage
of ONE convenient source
for EVERY expansion valve need!



NO. 777

- Adjustable superheat
- Available with C, Z, or standard liquid charge
- Capacities— $\frac{1}{2}$ to 2 tons Freon-12
- Stainless steel and brass throughout
- Easy superheat adjustment
- Anchored capillary
- Interchangeable inlets $\frac{1}{4}$ and $\frac{3}{8}$ S.A.E.
- Cartridge assembly simplifies cleaning
- Available with equalizer connection



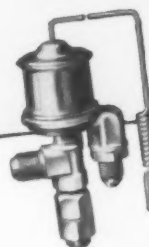
NOS. 786, 787, 788

- Adjustable superheat
- Gas charged for air conditioning applications
- Liquid "Z" charge for low temperature use (786 and 787)
- In-line connections
- Capacities 2 to 25 tons Freon-12
- Capacity easily changed on the job
- External equalizer connection



No. 673

- Adjustable superheat
- Stainless steel needle and seat
- Gas charged for motor overload protection and quick response
- Duraflex bellows resist corrosion and insure long, trouble-free service
- Monel inlet strainer
- Hermetically sealed joints
- $\frac{3}{8}$ S.A.E. inlet, $\frac{1}{4}$ F.P.T. and $\frac{1}{2}$ S.A.E. outlet
- Capacities—1.2 to 3.6 tons Freon-12



No. 573

- Adjustable superheat
- Gas charged for motor overload protection
- Stainless steel needle and seat
- Hermetically sealed joints
- Monel inlet strainer
- Forged brass body
- $\frac{1}{4}$ or $\frac{3}{8}$ S.A.E. inlet, $\frac{1}{4}$ F.P.T. or $\frac{1}{2}$ S.A.E. outlet
- Capacities— $\frac{1}{2}$ and 1 ton Freon-12



DETROIT Controls CORPORATION

ESTABLISHED AS **DETROIT LUBRICATOR COMPANY** IN 1877

5900 TRUMBULL AVE. • DETROIT 8, MICHIGAN

Division of **AMERICAN RUBBER & Standard Sanitary Corporation**

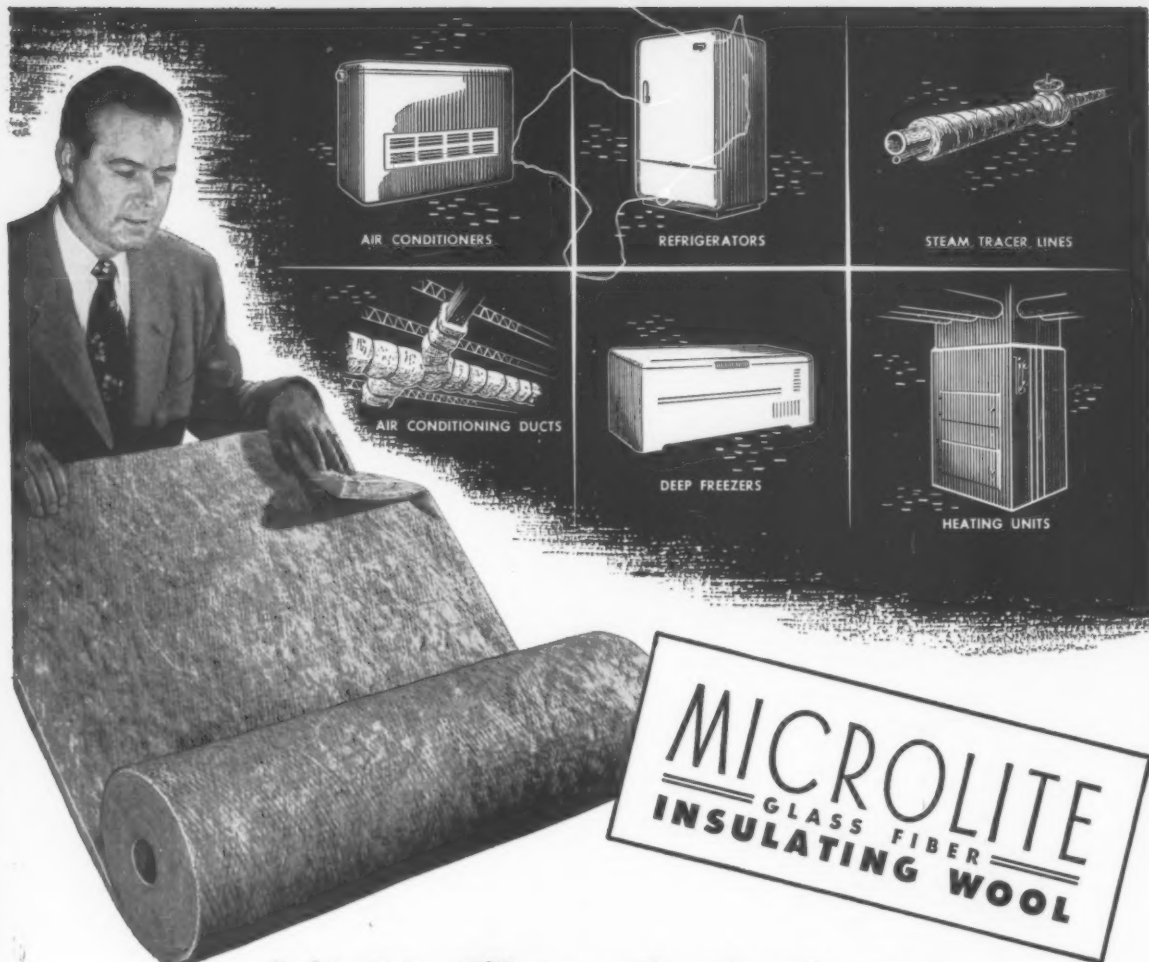
Representatives in Principal Cities • Canadian Representatives in Montreal, Toronto, Winnipeg • Railway & Engineering Specialists, Ltd. • Export Dept. — Box 218 Ridgefield, N. J.

**AUTOMATIC CONTROLS for REFRIGERATION • AIR CONDITIONING • DOMESTIC HEATING • AVIATION
TRANSPORTATION • HOME APPLIANCES • INDUSTRIAL USES**

Serving home and industry — AMERICAN STANDARD • AMERICAN BLOWER • CHURCH SEATS & WALL TILE • DETROIT CONTROLS • KEWAUNEE BOILERS • ROSS HEATER

Circle No. 5 on Reader Service Card for more information
and **AIR CONDITIONING • DECEMBER, 1952**





AIR CONDITIONERS

REFRIGERATORS

STEAM TRACER LINES

AIR CONDITIONING DUCTS

DEEP FREEZERS

HEATING UNITS

MICROLITE
GLASS FIBER
INSULATING WOOL

A Highly Efficient Blanket Insulation

... for effective control of temperature and sound

If you have a heating, refrigerating or air conditioning application that calls for an insulation with the most effective thermal-acoustical qualities, you might well ask these questions about Microlite Glass Fiber Insulating Wool:

Is it easy to apply? ... 24 square feet of half-inch, half-pound Microlite weighs a mere 8 ounces. Large sections can be quickly and easily applied, like a downy blanket. Knife or shears are the only necessary cutting tools.

Is it permanent? ... Microlite is made of glass fibers that resist fire, corrosion, moisture and vibration settling. It does not decay and provides no nutriment for fungi or vermin.

Does it insulate well? ... Inch for inch, Microlite is one of the most efficient of all insulations. 1 lb. density material has a "k" factor of .21 at 75° F. mean temperature.

Are convenient sizes and types available?

... It comes to you in resilient blankets up to 72 inches wide, up to 200 feet long, and up to 3 inches thick; compressed in easily-stored rolls. It may be ordered with foil, reflective coated paper and reinforced or unreinforced paper vapor barriers.

Perhaps Microlite can help you cut installation costs and achieve a lighter finished application. For more information and samples, write Glass Fibers Inc., 1810 Madison Avenue, Toledo 2, Ohio.

Sales Offices and Distributors in Principal Cities

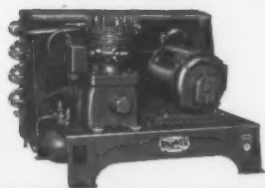
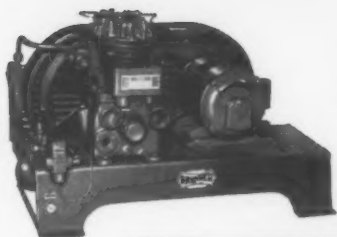
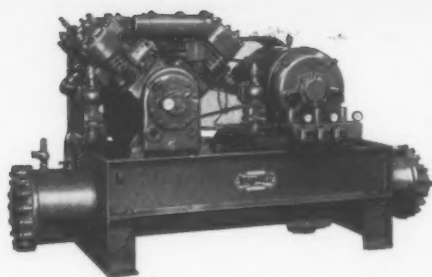
GLASS FIBERS INC.

Makers of glass fibers by the ELECTRONIC-EXTRUSION process ... developed, patented and used exclusively by Glass Fibers Inc.

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DECEMBER, 1952 • COMMERCIAL REFRIGERATION





FOR REFRIGERATION UNITS FOR **ANY NEED**

HIGH, MEDIUM, LOW OR SUB ZERO

TEMPERATURES

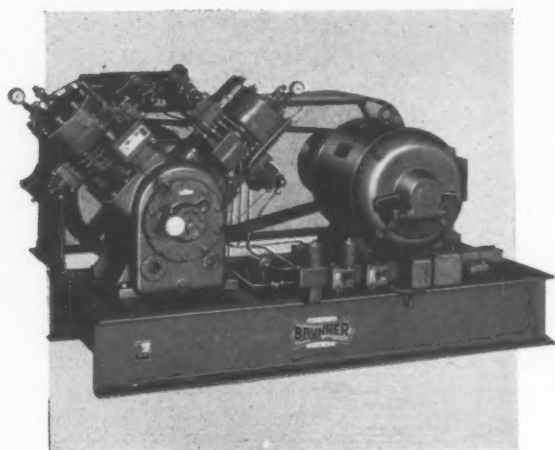
YOU CAN'T BEAT

BRUNNER
SINCE 1906

CONDENSING UNITS OR

COMPRESSOR UNITS

FOR USE WITH EVAPORATIVE CONDENSERS



DEPEND UPON **BRUNNER** TO GIVE YOU

A complete line of refrigeration units—69 models from 1/4 HP to 75 HP.

One-year warranty against defects in material and workmanship.

Exclusive design features that assure maximum life and trouble-free performance.

Full cooperation and advice of Brunner engineers in planning unusual installations.

A profit-builder for you—backed by Brunner's national advertising to your customers and prospects.

AIR CONDITIONING
Self Contained Units
in 5 sizes:
2-3-5-7½ & 10 HP.



For dependable refrigeration . . . easy to install, operate and service . . . you can depend upon Brunner. Year after year, Brunner "open type" refrigeration units continue to set new standards of quality, reliability and operating efficiency. Your customer stays satisfied—because Brunner stays on the job. Annoying, costly service calls are held to a minimum. And . . . when service is necessary . . . you save time and save money for your customers because Brunner units are so accessible and easy to service.

Install these performance-proved Brunner refrigeration units—in sizes from 1/4 HP to 75 HP. You'll see why Brunner is your customers' best buy . . .

Hundreds of distributors and dealers know what this Brunner backing means to them in dollars and cents. We'd like you to know, too—why not see your Brunner representative—or write us now? Dept. G-12.

BRUNNER MANUFACTURING COMPANY, UTICA 1, N.Y.

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and **AIR CONDITIONING • DECEMBER, 1952**

**A FINE FAMILY...
MUELLER BRASS CO.
REFRIGERATION
PRODUCTS**

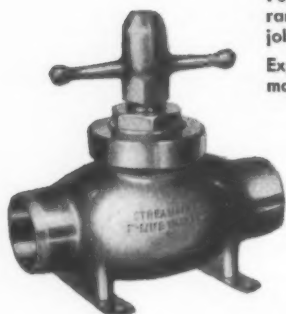
*Well known for lasting
trouble-free, service*



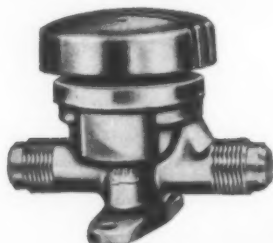
● You dealers, engineers and contractors can be sure that every member of the Mueller Brass Co. family of refrigeration valves, driers, fittings, and accessories will help guarantee the efficiency and long life of every installation.

Performance-proved Mueller Brass Co. products are available in an unusually wide range of sizes and styles. You can get everything you need for practically every job from your nearest refrigeration wholesaler.

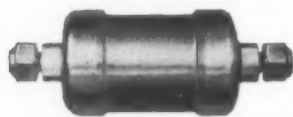
Experienced sales and field engineers are at your service — to help you sell and make the best possible installations.



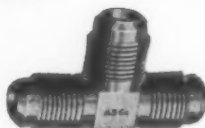
**GLOBE TYPE
VALVES**



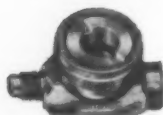
**LINE
VALVES**



**DRIERS AND
FILTERS**



**FLARE
FITTINGS**



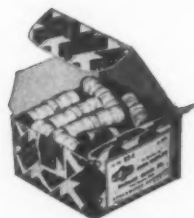
**LIQUID
INDICATORS**



**WROUGHT COPPER
FITTINGS**



Write for free catalog R-152
describing the Mueller Brass
Co. complete line of STREAM-
LINE refrigeration products.



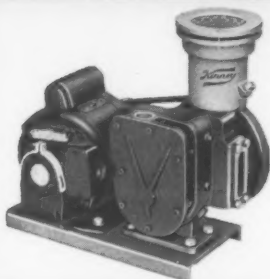
STREAMLINE refrigeration
products are individually
and multiple packaged in
sturdy dustproof cartons
for complete protection.

77

MUELLER BRASS CO. PORT HURON 12, MICHIGAN

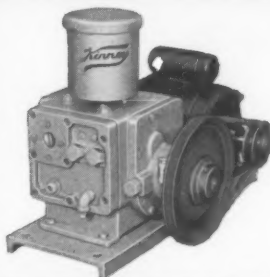
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DECEMBER, 1952 • COMMERCIAL REFRIGERATION



MODEL CVM 3153

- ★ Free Air Displacement 57 liters (2 cu. ft.) per min.
- ★ Absolute Pressures down to 0.2 micron
- ★ Compact: Only 14 3/4" long x 10 3/4" wide x 13 1/4" high
- ★ Motor: 1/4 h.p. standard type
- ★ Weight: Pump only 31 lbs., complete unit 70 lbs.



MODEL CVM 3534

- ★ Free Air Displacement 139 liters (4.9 cu. ft.) per min.
- ★ Absolute Pressures down to 0.2 micron
- ★ Compact Design: 19" long x 13 1/2" wide x 16" high
- ★ Motor: 1/3 h.p. standard type
- ★ Weight: Pump only 90 lbs., complete unit 140 lbs.

Pick **KINNEY** for fast vacuum!

Want to get down to low absolute pressures in a hurry? Then put one of these Kinney Vacuum Pumps on the job. Because these two midget pumps employ the same rotating plunger mechanism that has made Kinney the world favorite in the big vacuum pump field, you can count on them to work fast, dependably, efficiently . . . under all operating conditions. Compare Models CVM 3153 and 3534 with any other 1/4 HP or 1/3 HP vacuum pumps. Then you'll see why it pays to pick Kinney.

SEND COUPON FOR COMPLETE DETAILS



★
KINNEY MANUFACTURING CO., Boston 30, Mass. Representatives in New York, Chicago, Detroit, Cleveland, Atlanta, Philadelphia, Pittsburgh, Johnstown (Pa.), Charleston (W. Va.), Los Angeles, Houston, New Orleans, San Francisco, Seattle, and foreign countries.
★

KINNEY MANUFACTURING CO.
3618 Washington Street, Boston 30, Mass.

- ☐ Please send Bulletin SV-51 describing Kinney Vacuum Pumps CVM 3153 and CVM 3534.
- ☐ Who is the Kinney distributor in my region?

Name

Company

Street

City State

SUBSIDIARY OF THE NEW YORK AIR BRAKE CO.

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and AIR CONDITIONING • DECEMBER, 1952

WHY DESTROY

Expensive Equipment
by using
Destructive
Substances?

Chemicals that **EAT** their way out of Metal, Wood or Plastic Containers are injurious to the very surfaces that they are intended to treat. If a glass container should be accidentally broken, the contents could do untold damage to valuable property!



SOLVEX

(In tablet or granular form)

LOWERS HIGH HEAD PRESSURE QUICKLY
(And May Be Used While Plant Is In Operation)

REMOVES RUST, SCALE, ALGAE
And Other Encrusting Matter from Condenser
Tubes and Water Jackets in 1 to 5 Days.

CLEANS SCALE AND CORROSION FROM
EVAPORATIVE CONDENSERS, BOILERS,
HEATERS, TANKS . . . AND KEEPS 'EM CLEAN!

BE SAFE! USE SOLVEX!

ECONOMICAL AND SAFE TO CARRY TO CLEANING JOBS

SOLVEX Is A Very Effective CLEANING AGENT

FOR AIR CONDITIONING and REFRIGERATION SYSTEMS

Manufactured By

CHEMICAL SOLVENT COMPANY

3005 16th Street North, Birmingham, Alabama

Distributed By

VIRGINIA SMELTING COMPANY

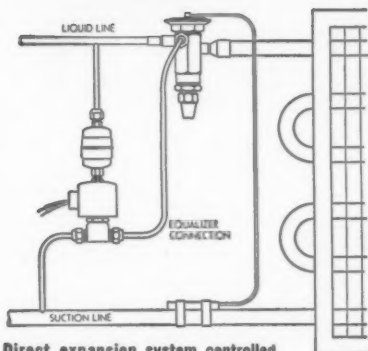
West Norfolk, Virginia

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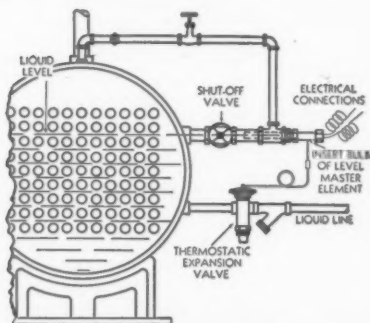
gives you

on **ALL SYSTEMS**

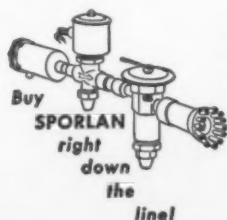
both **DIRECT EXPANSION
and FLOODED**



Direct expansion system controlled by Sporlan Thermostatic Expansion Valve and 171 Solenoid Pilot Control.



Flooded system of horizontal shell and tube type with Sporlan Level-Master Control.



SPORLAN VALVE COMPANY

7525 SUSSEX AVE. • ST. LOUIS 17, MO.

EXPORT DEPARTMENT

89 BROAD STREET • NEW YORK 4, N. Y.

On direct expansion systems . . . from comfort cooling to minus 100° F. engineers everywhere agree that for Peak Performance, it's Sporlan Right Down the Line. Why? . . . because only Sporlan offers you these time tested features.

Direct acting Thermostatic Expansion Valves from ½ to 100 tons Freon-12.

Sporlan Pioneered Selective Charges.

- C** Charge for suction temperatures above zero
- Z** Charge for suction temperatures below zero
- X** Charge for extremely low temperatures
- G** Charge with Flow-Master Element reduces hunting on comfort cooling systems.

On flooded systems . . . Sporlan has answered engineers' demands for Peak Performance with the Sporlan Level-Master Control. It consists of a conventional Thermostatic Expansion Valve equipped with the new Level-Master Element, which combines the liquid level control and the expansion device into one unit. The Level-Master Control provides a modulated flow and maintains practically a static liquid level in the low side. If the liquid level drops, a heater element in the insert bulb acts as an artificial super-heat increasing the pressure in the thermostatic element, thereby opening the valve. If the liquid level rises, its refrigerating effect on the insert bulb overcomes the heater and the valve throttles.

*On your next direct expansion
or flooded job . . .
Be Sure with Sporlan!*

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and **AIR CONDITIONING** • DECEMBER, 1952

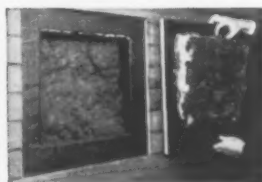
In-place field tests point way to most effective use of . . .

PALCO
INSULATION
WOOL

Newly developed scientific in-place tests now measure installed efficiency of Palco Wool after many years in use. Conducted under actual operating conditions by independent refrigeration engineers, these impartial field tests establish an entirely new concept of low-temperature insulation efficiency. Outlined below are highlights of test data presented in a Technical Bulletin available from The Pacific Lumber Company for more effective application of low-temperature insulation.



EFFECTS OF PROPER AND IMPROPER VAPOR SEAL



Graphs, charts and photographs show actual results of proper and improper vapor seal after many years of operation. They show how low moisture pattern of Palco Wool maintains maximum insulating efficiency even under adverse conditions.

HEAT STORAGE FACTOR ANALYZED



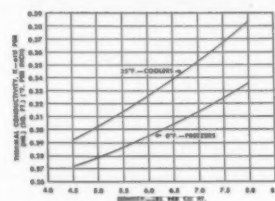
New test methods show how Palco Wool retards heat flow so that it does not reach cold side during peak load period, actually reversing flow of major part of heat stored during daytime hours.

LOW "K" FACTOR OF PALCO WOOL MEASURED



Actual thermal conductivity of Palco Wool in insulated walls of freezers and coolers of various temperatures is shown in design curves based on electrical heat flow meter readings between inner and outer walls.

DENSITY REQUIREMENTS DETERMINED



Graphs and tables based on in-place field test data show ideal density for Palco Wool Insulation to meet various temperature requirements for maximum efficiency under actual operating conditions in coolers and freezers.

DECREASING MOISTURE CONTENT DEMONSTRATED



Normal moisture content of Palco Wool when shipped averages 15%, while samples from centers of typical refrigerator wall cavities averaged about 9%. Field test data shows how this results in increasing insulation efficiency.

Factual field data never before available from laboratory findings results from these in-place field tests. It offers a practical approach to actual operating problems. To obtain this valuable information with no obligation, request Technical File No. **EN-6** today!

THE PACIFIC LUMBER COMPANY

100 BUSH STREET, SAN FRANCISCO 4, CALIFORNIA
35 EAST WACKER DRIVE, CHICAGO 1, ILLINOIS

PALCO
INSULATION
WOOL

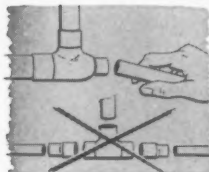
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DECEMBER, 1952 • COMMERCIAL REFRIGERATION



**"I'm Ahead of the Game
with FITTINGS
FROM TUBES"**

**One fitting often takes
the place of three**



NIBCO's full line makes sure there's the right fitting for every part of the job. Saves bushings — makes better looking installations.



I avoid test leaks

Fittings from tubes can't have sand holes and their precision-formed solder cups fit just right.



**And I save
installation time**

Fittings from tubes heat up and take the solder fast. And with the NIBCO line you use less fittings.

When you buy fittings, protect your profit on the job by specifying NIBCO. Order from your jobber.

**NORTHERN INDIANA BRASS CO.
ELKHART, INDIANA**



**The NIBCO line
includes**

Adapters from Tubes



Wrot from tube these adapters match copper tube installations. Precision-formed extended solder cups fit! And they heat up fast without deforming the threads or burning out pipe compound. Husky wrench hexes add to ease of installation. Wrot adapters are another example of how the NIBCO line makes a better job for the customers and a better profit for you.

NIBCO

**Send for BIG
NIBCO Catalog**

NORTHERN INDIANA BRASS CO., 1214 Plum Street, Elkhart, Ind.

Rush me your big 108-page catalog G of NIBCO valves and fittings ☐
Also include Catalog LPV-1, Low Pressure Valves for Modern Homes ☐
and Catalog TV-207, Threaded Bronze Valves ☐

Name

Address

City State

NoDrip TAPE

SOLVES the Problem of CONDENSATION DRIP

- KEEPS PIPES CLEAN AND DRY
- PREVENTS RUSTING, THUS PROLONGING LIFE
- KEEPS FLOORS DRY AND SAFER

NoDrip Tape forms a tight fitting, sealed jacket—holds temperatures steadier—eliminates icing and frosting.



Cold water pipes and suction lines running from refrigerating machines to condensers, all joints and fittings, need NoDrip Tape.

Also used on refrigerant lines in air conditioning systems, walk-in freezers, deep freezers for home and business, and on cold water pipes in basements.

EFFECTIVE IMMEDIATELY

After you have followed the easy application directions and NoDrip Tape is in place, dripping will stop. No tools or brads are needed. NoDrip Tape is wound around pipes and pressed in place with the hands.

CONTRACTORS—Include NoDrip Tape protection in your estimates, not only to stop dripping, but for the sake of good appearance on finished installations.

MANUFACTURERS and SERVICE ENGINEERS investigate the many advantages of NoDrip Tape for condensation control and rust prevention.

Order Through Your Supply House
Circular on request

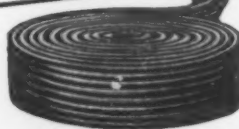
J. W. MORTELL CO.

Technical Coatings Since 1895

553 Burch Street Kankakee, Illinois

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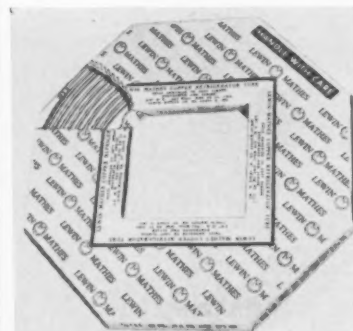
A roll covers about
10 feet of 1/2" pipe
\$1.69 List
Higher West of Rockies
and Canada



PICTURES in the NEWS



SAFETY AWARD for achieving one million man-hours of operation without a lost-time accident was recently presented to employees of Penn Controls, Inc. by the National Safety Council. The million man-hour record was established on Feb. 22, 1952, and has continued unbroken since that time. Shown here with the plaque are R. S. Penn, vice president for operations, and J. P. Bradford, personnel director.



A NEW PACKAGE for its refrigeration tubing has recently been introduced by Lewin-Mathes Co., St. Louis. Designed as a reshipable package for refrigeration tube that will offer greater protection to the tube, and be easier to handle, stock and identify, the new "Handigrip" carton is an adaptation of the one previously used by Lewin-Mathes to package its copper water tube. The carton was designed by Edward F. Schweich, a Lewin-Mathes executive, and the company has applied for a patent on it. Octagonal in shape, with a square cut-out in the center, the "Handigrip" carton is easy to pick up and carry. Eight-point (instead of four-point) contact is said to prevent distortion of the tube, which is cushioned and held firmly to prevent its shifting in the carton. Especially well suited for distributor storage, the carton can be laid flat, stacked in hori-

**SKILLED
SERVICE
on the SPOT!**

**TO HELP YOU
SELL MORE**

**Century
MOTORS**



- ★ Century Branch Offices
- Century authorized service shops

Century's

NATION-WIDE

AUTHORIZED

SERVICE

ORGANIZATION

There's no costly delay or confusion, should a Century Motor ever need service. A glance at this map will show you why.

Hundreds of trained electric motor repair men in established independent service organizations are located convenient to motor users throughout the United States. They are equipped to give Century Motors the same kind of skilled care that is used in their manufacture.

They carry a stock of Century Motor parts, and also some standard motors to be used as replacements. These authorized Century service shops are authorized to render immediate decisions regarding warranty service on Century apparatus. Your customers will appreciate this reliable service organization.

For a list of service stations—or for more information on your opportunities for success with Century Motors, write us today.



CENTURY ELECTRIC COMPANY • 1806 Pine Street, St. Louis 3, Missouri
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and AIR CONDITIONING • DECEMBER, 1952

BENDIX-FRIEZ PORTABLE TEMPERATURE, HUMIDITY RECORDER



Model 160

**Indispensable
for ... SELLING
THE NEED,
CHECKING THE INSTALLATION**



When it comes to selling and installing air conditioning, refrigeration or heating equipment, this precision Bendix-Friez instrument can make your job much easier all-around.

First, it will help you sell. For it gives your customers charted, scientific evidence of their need for temperature and humidity control. Second, it will help you check the installation . . . because it gives visible proof to you and your customers of whether or not the installation is operating properly.

This Bendix-Friez Temperature and Humidity Recorder provides 3" x 5" charts with 10 or 30 hour records . . . is portable as a camera . . . built to U.S. Weather Bureau standards . . . the product of the world's oldest, largest manufacturer of fine weather instruments. Write for full details today.



BENDIX-FRIEZ HYGRODIAL Precision Humidity and Temperature Indicator

Hand-operated for laboratory precision. Calibrated to professional standards of accuracy. Modern, plastic case measures 4" high, 6" wide, 2 1/2" deep. Desk or wall mounting.

FRIEZ INSTRUMENT
DIVISION OF



1410 Taylor Avenue
Baltimore 4, Maryland

EXPORT SALES: Bendix International Division;
72 Fifth Avenue, New York 11, N. Y.

Circle No. 16 on Reader Service Card

16

horizontal racks, or suspended on wall hooks.



ADVANCED RESEARCH in the study of organic tissue has been greatly facilitated by this cryostat designed and built for the Harvard Medical School by Harris Refrigeration Co., Cambridge, Mass. The cryostat houses a microtome (tissue slicing device), and the low temperatures which it maintains make possible the preparation of extremely thin slices of organic tissue for microscopic study. Interior of the cryostat is about 6 cu. ft. in volume. A 1/3-hp condensing unit located in the base of the unit circulates refrigerant

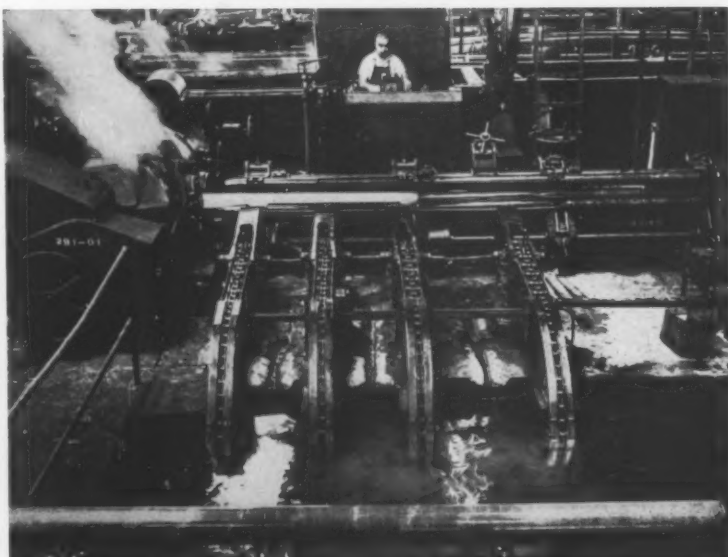
through the coils soldered to the inside walls to make possible operating temperatures from -16 to -25 F. Control is provided by an adjustable expansion valve and a back-pressure regulating valve. Tapered front section is provided with gloved armholes, an insulated glass window, and a door. Air inside the cabinet is circulated by a small fan controlled by a foot switch so that the fan can be shut off during the manipulation of each tissue section so that the section will not be blown away.

DETAILS OMITTED

The story describing the new process for anodizing aluminum which appeared in the October issue of **COMMERCIAL REFRIGERATION AND AIR CONDITIONING** beginning on page 36 should have included the fact that a Brunner Model 20000 condensing unit provides the refrigeration for the installation.

Officials of Brunner report that despite the carefully controlled temperatures required (ranging from 50 down to 25 F), the condensing unit has handled the load with ease.

It is expected that the new process will find many other applications in American industry,



COPPER TUBE, produced from solid cast billets, gets its first rigorous processing in this piercing machine at Chase Brass & Copper Co. mill in Waterbury, Conn. Heated in a rotary furnace to approximately 1500 F., copper billets ranging in diameter from 3" to 9" and weighing up to 1000 lbs. move into this billet piercer on a conveyor. In this piercing machine the hot billets are rotated and driven ahead by tapered rollers, which open up the end of the billet to form a cavity. A mandrel then moves in and the copper continues to rotate over it until a rough, hollow tube is formed. A chain conveyor picks up the copper tube and passes through a water quench bath, then to a pile of cooling tubes. From heated billet to quenched rough tube requires less than a minute. The operator shown controls the entire process with hand levers without even leaving his seat. When a dozen or more pierced tubes have been stacked, an overhead crane carries them to one of the Chase drawbenches which cold draws the tube through dies down to the desired size for use in a wide variety of applications.



Now-
a "VEST POCKET" Size!



SOLENOID VALVE

Types 2P2 and 2P3

(Patent Pending)

With Large Capacity—Quiet Operation—High Opening Pressure—and Tight Seating Over a Wide Pressure Range

Compactly designed for easier installation and maintenance—even in the tightest spots. Quiet operation over an extra-wide range of inlet pressures, from $\frac{1}{2}$ P.S.I. to 250 P.S.I. Suitable for Air, Gas, Light Oils, Water, F12, F22, and other non-

corrosive fluids, at temperatures up to 200° F. Silent, synthetic rubber seating disc is easy to replace, when necessary, because of the valve's simple come-apart construction. Investigate this efficient new JE Solenoid Valve.

Available in
two connection sizes:

1/4" F.P.T. (Type 2P2)

3/8" F.P.T. (Type 2P3)

★
**Unconditionally
Guaranteed for
18 Months**

May we submit samples for
your test and approval?
Write today for details.

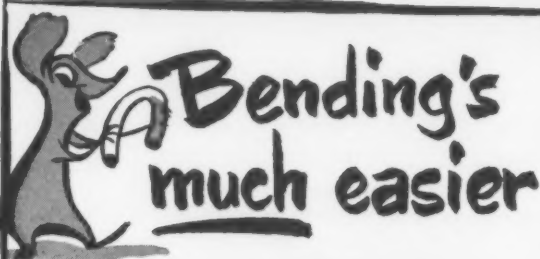
ALL JE Solenoid Valves Have These 5 Major Features of Dependability —

- Tight Seating — no bubble tolerance
- Simplicity — only two moving parts
- Long Life — cool coils
- Durability — all corrosion-resistant material
- Opening Pressure Differential — higher than most others on the market

JACKES-EVANS MANUFACTURING COMPANY

CONTROLS DIVISION

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WHEN YOU WORK WITH
REVERE
DRYSEAL
REFRIGERATION TUBE

Truly, it's no effort at all to bend dead-soft Dryseal. No tools are needed, just bend it by hand. And the special temper of the copper used, and its ductility, are the reasons Dryseal will not split when flared for compression fittings. Another thing you'll like about Dryseal are the special, precise, mechanical, double-crimped ends. This double crimping is the last step in the manufacture of Dryseal, and assures you of receiving a bone-dry, dirt-free tube.

The seal is made in such a way that it does not change the diameter of the tube. This makes it possible to pass the tube through any opening large enough for the tube itself. Economical tube sizes range from $\frac{1}{8}$ " to $\frac{3}{4}$ " O.D.

And, for your greater convenience, Dryseal is packed in a nifty-50 one-coil carton. This carton, which has been attractively designed for easy identification in stock, contains one 50-foot coil of Dryseal... is easier to handle, light weight, economical and is sturdily made to assure protection of the tube.



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COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801
230 Park Avenue, New York 17, N. Y.

Mills: Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.;
Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y.—
Sales Offices in Principal Cities, Distributors Everywhere

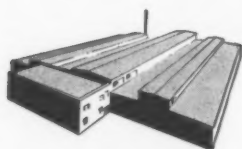
SEE REVERE'S "MEET THE PRESS" ON NBC TELEVISION EVERY SUNDAY

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Good Men to Know!



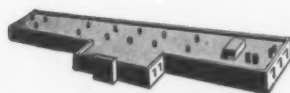
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Illinois-Wisconsin Territory
serving you through these
reputable wholesalers



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Madison, Wisconsin



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Green Bay, Wisconsin



CONSULT YOUR McQUAY WHOLESALE FOR EVERY REFRIGERATION NEED

McQuay is proud of its complete line of *proved and preferred* refrigeration equipment and of the men who represent the company to you. There is a McQuay wholesaler in your territory, qualified by long experience and backed by the entire McQuay sales and engineering organization, who can give you the right answer to your specific problem—whether it's selling help, technical advice or quick action you want. Consult your McQuay wholesaler or write McQuay, Inc., 1643 Broadway N.E., Minneapolis 13, Minn.

McQuay INC.



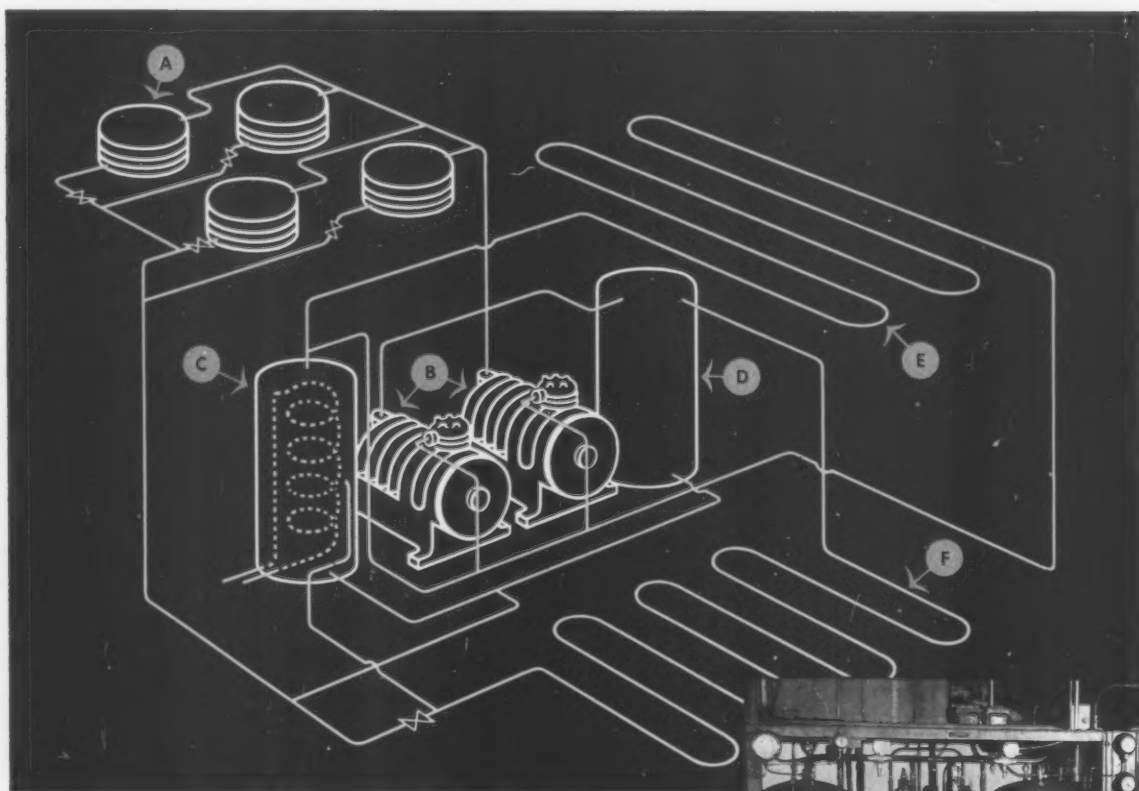
REFRIGERATION
HEATING
AIR CONDITIONING

MANUFACTURERS OF HEAT TRANSFER EQUIPMENT SINCE 1923

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and AIR CONDITIONING • DECEMBER, 1952

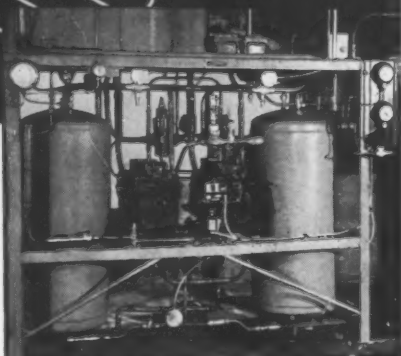
How ANACONDA copper "HEAT PUMP"



HOW IT WORKS — Heat pump system in sausage plant removes heat from sausage with forced-air refrigerating convectors (a). Compressors (b) use Freon-12 refrigerant. 80-gallon heat exchanger tank (c) warms domestic water running through 300 feet of copper tubing. Surge tank (d) takes care of vapor or liquid refrigerant. 500 feet of copper tubing in office floors (e) provides radiant heat, and 1800 feet in basement floor (f) dissipates heat in summer, stores it for radiant heating on nights, weekends.

ANACONDA Products for the Refrigeration Industry

Copper Tubing	Hard Copper Tube	Formed Tube Parts
Restrictor Tube	cut to length	Fittings
Bourdon Tube	Copper Water Tube	Vibration Eliminators
Thermal Expansion Bulbs	in coils	Flexible Metal Conduit
	or straight lengths	



HEAT PUMP HEART — All mechanical equipment is assembled as a packaged unit. Two 3-hp. compressors, plus automatic controls, are located between heat exchanger (left) and surge tank (right). Charles Charlton, Hartford, Conn., Designer.

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DECEMBER, 1952 • COMMERCIAL REFRIGERATION

tubes contribute to

success story

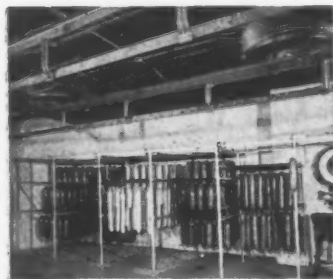
When both heating and cooling sides of a refrigeration system are put to work, it's a true heat pump *with important operating economies*. Here's an interesting example of such double duty. In the Hartford, Connecticut sausage plant of Mucke & Sons, process heat warms offices. ANACONDA Copper Tubing plays an essential part. Its excellent heat-transfer properties, corrosion resistance, and consistent uniformity make for high efficiency.

Primarily this system was designed to cool cooked sausage. However, it was apparent that *three* jobs could be done by the "heat" side. Designer Charles Charlton used heat removed from the sausage (1) to heat offices, (2) to provide washroom hot water, (3) as a reserve, stored underground, for use when sausage processing is not in operation.

Nothing succeeds like success. Results have been so encouraging that Mucke & Sons are thinking of expanding the system to make further use of the heat.

If this installation interests you, we will gladly forward a complete description on request.

On your jobs—ANACONDA Copper Tubes and ANACONDA Refrigeration Products mean lower labor costs and high quality. The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.



HEAT REMOVED—Corner of the sausage cooling room shows two of the circular convectors in the ceiling. Temperature is kept at 40° F. Cooler is 25 ft. x 35 ft. with a cooling load of 60,000 Btu per hour.

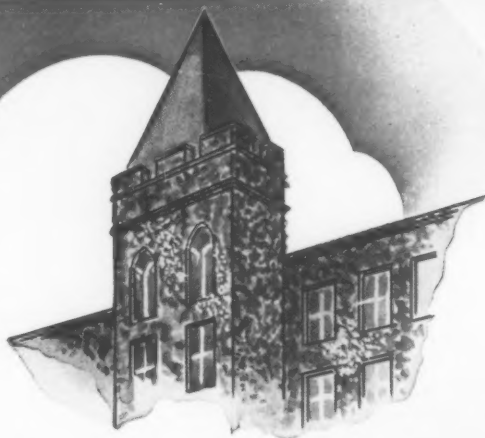


HEAT USED—Shown here is part of the 500 feet of copper coil embedded in concrete slabs in the floor of adjacent plant offices and other areas. This tubing circulates the refrigerant gas to furnish radiant heat.

for consistent uniformity—ask for **ANACONDA** refrigeration products

and AIR CONDITIONING • DECEMBER, 1952

The Refrigeration Wholesaler



He doesn't wear a cap and gown to greet you when you enter his place of business . . . he may not even wear his coat . . . and his shirt may perhaps be soiled. But he's a "professional man" in every respect.

The Refrigeration Wholesaler is the "heart" of the industry. To him and through him flow . . . not only the great mass of products which are the life blood of the industry . . . but also an immeasurable wealth of information and services which he gives willingly and without restriction.



We, of ANSUL, pay an enthusiastic tribute to you, Mr. Refrigeration Wholesaler. Through your close co-operation with the Ansul Technical Staff hundreds of thousands of copies of Ansul Technical Bulletins . . . have been made available to Refrigeration Service Engineers.

*Ansul serves the industry through
Leading Refrigeration Wholesalers exclusively.*



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REFRIGERATION DIVISION • MARINETTE, WISCONSIN

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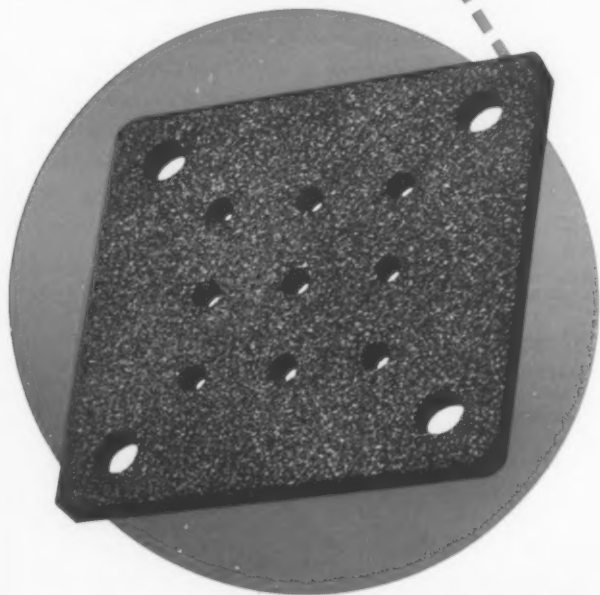
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In making a better motor . . .
**IT'S THE LITTLE THINGS
THAT COUNT, too!**



Reliance PRECISION-BUILT Protected Open A-c. Motor



Here is one of the many extras which prove that "All Motors are NOT Alike."

This synthetic-rubber gasket . . .

- ★ **Permanently indexes the motor leads**
- ★ **Prevents leads from rubbing against metal parts**
- ★ **Prevents water from entering motor at conduit box**

Write for more evidence of the many ways in which Reliance Precision-Built Motors are made better to deliver dependable power longer. Bulletin B-2101 provides selection data for a-c. motors from 3/4 to 300 horsepower.

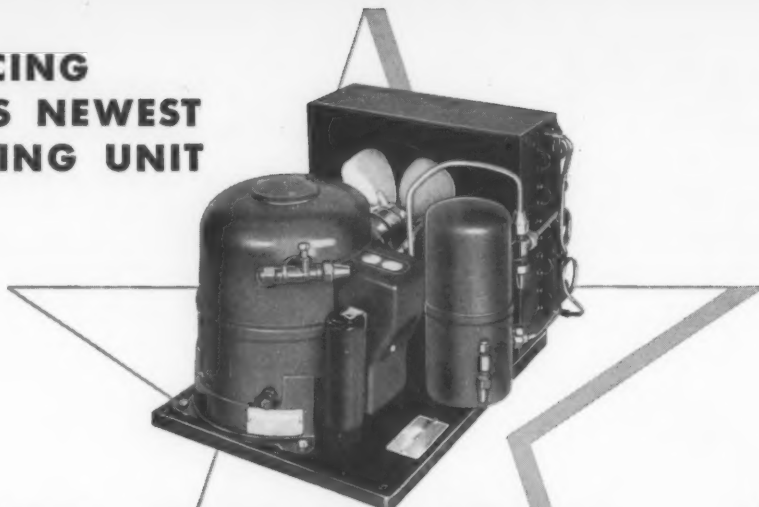
RELIANCE ELECTRIC AND ENGINEERING CO.

1113 Ivanhoe Road, Cleveland 10, Ohio

Sales Representatives in Principal Cities

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and AIR CONDITIONING • DECEMBER, 1952

**INTRODUCING
AMERICA'S NEWEST
CONDENSING UNIT
STAR . . .**



SERVEL SUPERMETIC

**MODEL
SM49**

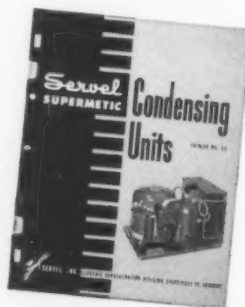
7 FEATURES that make
**SELLING EASIER—PROFITS
SWEETER** when you
SWITCH TO SERVEL . . .

- ★ **BUILT-IN LUBRICATION SYSTEM**—protects every vital point—no manual oiling.
- ★ **OIL-FREE REFRIGERANT**—no damaging oil "slugging."
- ★ **CUSHIONED QUIET**—special mountings assure continued smooth operation.
- ★ **EXTRA-COMPACT**—easy to install and check—saves valuable space.
- ★ **LOW-COST WARRANTY**—with full factory-backing.
- ★ **WIDE LINE**—models for every commercial refrigeration use— $\frac{1}{4}$ to 3 HP.
- ★ **OVER 100 AUTHORIZED WHOLESALE SUPPLIERS**—service you want when you want it.

IT'S HERE . . . THE STURDY, COMPACT, LIGHT WEIGHT HERMETIC CONDENSING UNIT THAT THE COMMERCIAL REFRIGERATION INDUSTRY HAS BEEN WAITING FOR—Servel's new $\frac{1}{2}$ HP single-cylinder, hermetically sealed SM49* fills the need for a compact medium temperature unit in the store fixture and beverage cooling fields. Over-all height $13\frac{1}{16}$ " ; length $20\frac{7}{8}$ " ; width $16\frac{9}{16}$ ". Net weight 105 lbs.; crated 120 lbs. Furnished for either 115 or 230 volt, single phase, 60 cycle (115 volt furnished as standard). The same sound engineering that for nearly a third of a century has made Servel products unequaled for long life and dependability will be found in this new unit in full measure.

*Model SL49A for low temperature applications available on special order.

A NEW CATALOG (NO. 53) giving full details about Model SM49 and the 31 other advanced models in the Servel line is just off the press. Get your copy from your nearby Servel Authorized Wholesaler or write the factory.



Servel

SERVEL, INC.

**ELECTRIC REFRIGERATION DIVISION
DEPT. C-12, EVANSVILLE 20, INDIANA**

THE NAME TO WATCH FOR GREAT ADVANCEMENTS IN REFRIGERATION AND AIR CONDITIONING



Bringing Home the Bird

... Or how the CCC Plan helps close **MORE** refrigeration sales



Experience shows that a high percentage of prospects expect and need to buy on time ... can't "sign on the dotted line" any other way for lack of ready cash.



Stalking sales is easier when you know your market. And by offering **COMMERCIAL CREDIT PLAN** you're using financing that millions know and prefer.



Bag more sales with CCC. It's easier to sell when you can offer *immediate possession, reasonable rates, 2 to 3 years to pay.*

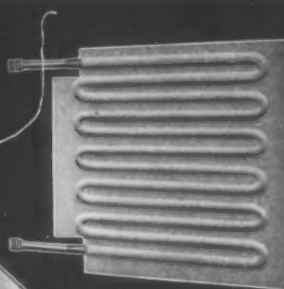
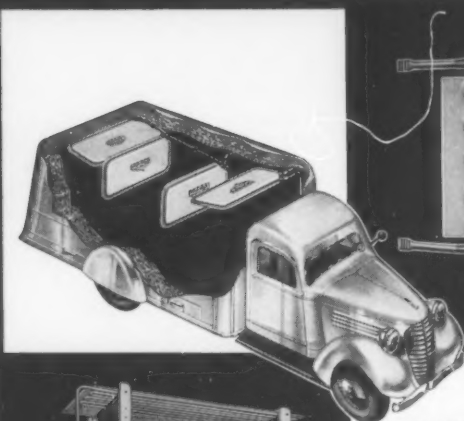


Once he's bagged, you continue to benefit. Enjoy our expert credit and collection facilities and improve your own cash position by carrying less receivables.

WRITE, WIRE OR PHONE your nearest **COMMERCIAL CREDIT** office for complete information and facts on how many other Distributors and Dealers are successfully using our PLAN. Phone the **COMMERCIAL CREDIT** office in your city or write or wire **COMMERCIAL CREDIT, 14 Light St., Baltimore 2, Maryland.**

COMMERCIAL CREDIT CORPORATION

A subsidiary of Commercial Credit Company, Baltimore
... Capital and Surplus over \$125,000,000 ... offices in principal cities of the United States and Canada.



Serpentine Evaporator

"Hold-Over" Truck Refrigeration

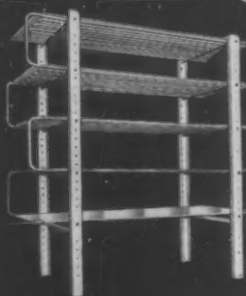


Plate Stand

Plate Bank



KOLD-HOLD's *efficient line* *gives you more for your money*

There is a difference in the performance of Kold-Hold Refrigeration Plates that shows up in reduced operating costs. The difference is found in their greater efficiency . . . their ability to pull down larger loads, faster . . . using less power . . . at a lower cost to you.

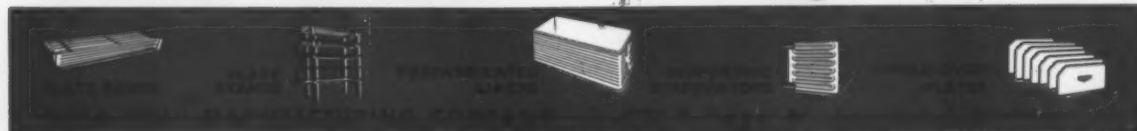
This efficiency is readily apparent in "Hold-Over" Plates that maintain dependable, low temperatures in truck bodies for as little as 10 cents a day. Operated off the existing plant cooling system or by a condensing unit mounted on the truck, they hold predetermined temperatures throughout

the longest day's hauls and reduce the cost of marketing perishable foods.

This efficiency is readily apparent in "Hold-Over" Plates for quick freezing, chilling and holding. These plates have the equivalent of 100% prime surface because the refrigerant flows in a continuous pass formed in the plate itself. There is no internal tubing or piping. This exclusive "Serpentine" design in individual Plates, Plate Stands and Plate Banks assures you more efficient refrigeration . . . less trouble . . . lower costs! Send for full details today!

KOLD-HOLD

protects every step of the way



Circle No. 25 on Reader Service Card for more information

ELECTRIC YEAR-AROUND air conditioning represents a great untapped source of potential kilowatt-hour sales for America's electric power companies, H. M. Brundage, general manager of G-E's heat pump department, said in a recent talk before members of the Southeastern Electric Exchange. Brundage said that the average annual consumption of electricity in U.S. homes today amounts to about \$53.40 per year, whereas the average homeowner spends from \$75 to \$500 a year on such fuels as gas, oil or coal for heating alone. The heat pump, he said, might well be the device that would enable the electric utilities to tap the great reservoir of potential kilowatt hours represented in year-around air conditioning.

THE PARTICULAR INTEREST of metallurgists in low-temperature research is typified by the recently reported "Zerolling" process, developed by N. A. Ziegler of the Crane Corp. and Porter H. Brace of Westinghouse Electric Corp. They have found that rolling or forging steel at sub-zero temperature produces an extra hard metal. Later they discovered that the cold treatment, called "Zerolling", produces an even harder steel with heating at controlled temperatures. Steel so treated withstands much higher pull and pressure loads than the conventional stainless steels.

A NEW TEXT on Management of Refrigerating Machinery is now included in International Correspondence Schools courses in Refrigeration, Refrigeration and Air Conditioning, and Stationary Refrigeration. Subjects covered in the new text are: starting of compression plants, operation of compression machinery and its maintenance, management of Freon plants, types of bearings, and bearing troubles and remedies.

LOCKER OPERATORS are very much interested in the food club plan for selling frozen foods, according to Robert L. Madeira, executive secretary of the National Frozen Food Locker Institute. The growing acceptance of these plans means that frozen foods are being sold in increasing quantities, and if the locker plants don't sell them somebody else will, he observes. NFFLA's point of view is that locker plants, with their facilities for supplying both meat and frozen foods without the old problem of short-circuiting normal food distribution channels, are the best source of supply for such plans.

ON THE HUMAN INTEREST SIDE, a deep-freeze operation recently restored the health of an 11-year-old girl in an operation at Hahnemann Hospital in Philadelphia. The girl was given an anesthetic, then put in a kitchen-type freezer for 12 hours until her temperature dropped to 88 degrees. Doctors were then able to stop her heart for five minutes while they repaired a hole in it. Formerly subject to weakness and fainting, the youngster is now up and walking today.

AMERICAN INDUSTRIAL GENIUS, as well as the U.S. Air Force airlift, aided in making possible the greatest pilgrimage of Moslems in history to Mecca for the recent religious ceremonies. While the USAF airlift enabled many more pilgrims to reach Mecca in time for the annual ceremony, American industry, by building an ice plant, helped thousands of Moslems to survive the intense heat of the desert by providing cooled water to quench thirst and prevent heat prostration. Victor Kano, Carrier field engineer in the Middle East, says that installation of the ice plant—the first one Mecca has ever had—"saved hundreds of lives" by affording relief from high temperatures, which at times reached 130 degrees. The ice plant had a capacity of 30 tons per day.

Plan for Profits through a Profit Sharing Plan

All profit sharing is based on three general principles:

- (1) that a business should be considered as a team, and every employee as a member of that team.*
- (2) that every man has a human right to participate in the increased prosperity to which he has contributed through the teamwork of the business.*
- (3) that the recognition of the dignity of each individual employee will result in greater prosperity for the business as a whole.*

There are many types of profit sharing plans, both direct and indirect. Chances are you will find, just as this distributor did, that a judicious combination of several of these plans will prove best suited to your particular type of organization.

by Frank D. Stella

**President
F. D. Stella Products Co.
Detroit, Mich.**

PROFIT planning and profit sharing, especially during these days of high taxation, should be a must as a topic of discussion for all businessmen. In our operation, in a small way, we have an improvised form of profit sharing which certainly has helped to hold an organization together with morale at high level.

The Council of Profit Sharing Industries, in its declaration of principles, has defined profit sharing as "any procedure under which an employer pays to *all* employees, in addition to good rates of regular pay, special current and deferred sums, based not only upon individual or group performance, but on the prosperity of the business as a whole."

There is no one profit sharing plan, but there are an infinite number of profit sharing plans and of combinations of such plans. These plans complement one another and are used in all possible combinations.

Types of Plans Vary

Direct profit sharing plans can be classified as follows:

1. *Cash plans*—where a certain percentage of the company's income is added to the regular wages and distributed periodically according to various keys. (This plan, in part, is our plan which I will later attempt to briefly outline).

2. *Wage dividends*—where the percentage of profit sharing is determined by the dividend paid the stockholders.

3. *Stock ownership*—where the employee is made a stockholder.

4. *Trust plans*—where a certain percentage of the company's income is accumulated in a trust fund, with or without employee contribution.

Indirect profit sharing plans include pension plans; guaranteed annual wage plans; production sharing plans; cost savings sharing plans; associative plans; and cooperative plans.

Related programs are your multiple management plans and employee benefits consisting of group life in-

surance, retirement annuities, disability benefits, sickness benefits, paid vacations and holidays, etc.

Any of the above types of plans can fit or suit any type or size of business whether you employ 10 persons or 1,000 persons. The success of the plan will not depend on the size of business so much as on administration of the plan.

Select Plan Carefully

The selection of a plan to suit a business deserves considerable amount of investigation to make certain that the plan selected is the plan that will enhance the position of the company as well as the morale of the employees.

In our particular operation, small as it is, we use the composite of several plans to make up our plan—the cash plan, as well as a guaranteed salary plan, with employee benefit, such as group insurance, disability and sick leave pay, paid vacations and holidays.

The cash plan is set up by setting aside a percentage of our monthly profits into an employee reserve fund. At the end of the year, during the holiday season, this profit in the reserve is distributed to employees in amounts depending on position and longevity. The employee looks forward to this cash payment, which actually came out of profits.

Aside from this cash plan, our employees benefit in group insurance and hospitalization, paid vacations and holidays as well as sick leave and disability pay along with a guaranteed salary.

Cash Plan Offers Benefits

The major reason for our selection of the cash plan rather than the others is because we felt that for a small organization it offered the most advantages, such as:

1. The receipt of cash is a tangible evidence of the results of sharing profits. For many employees a payment in cash is the only form of additional financial return which is helpful and appreciated.

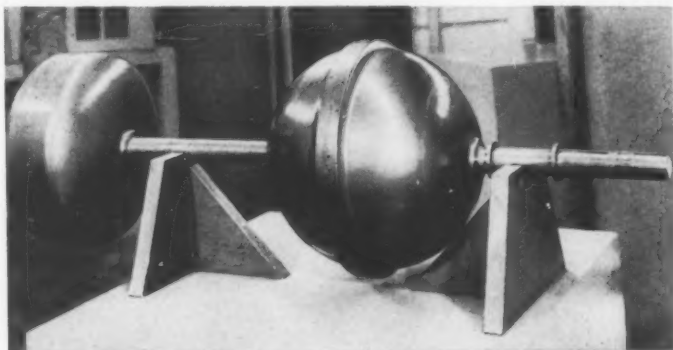
2. The cash distribution dramatizes periodically to the employees current progress and prosperity of their company. Employee interest in the affairs of the business can be ef-

Continued on page 49

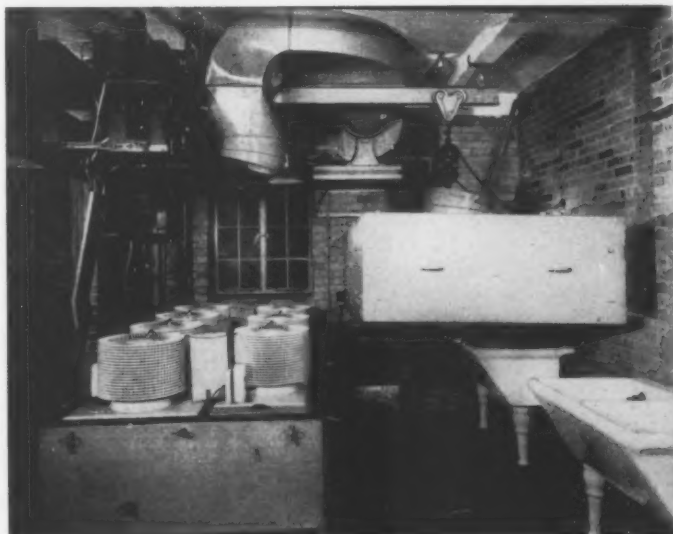
It Wasn't So Long Ago...

MANY of us are prone to forget that mechanical cooling, now so commonly accepted as a virtual necessity in the American way of life, is a relatively recent blessing to our civilization. Today's modern, efficient refrigerating and air conditioning mechanisms are a far cry from the experimental mechanical oddities of just a few decades ago.

To freshen your memory (if you're that old) or to enlighten you (if you're not), the photos below show two of General Electric Co.'s earliest ventures into the mechanical cooling field.



FIRST REFRIGERATION machine developed by GE was built in 1912 for the American Audifren Co. It was an ingenious hermetically sealed system with one bell containing the compressor and condenser, while the other bell served as the evaporator.



FIRST AIR CONDITIONING system developed by GE engineers for residential use consisted of seven "monitor top" refrigeration units from GE domestic refrigerators. The system was installed in 1928 to cool the New York office of Dr. A. E. Barach.

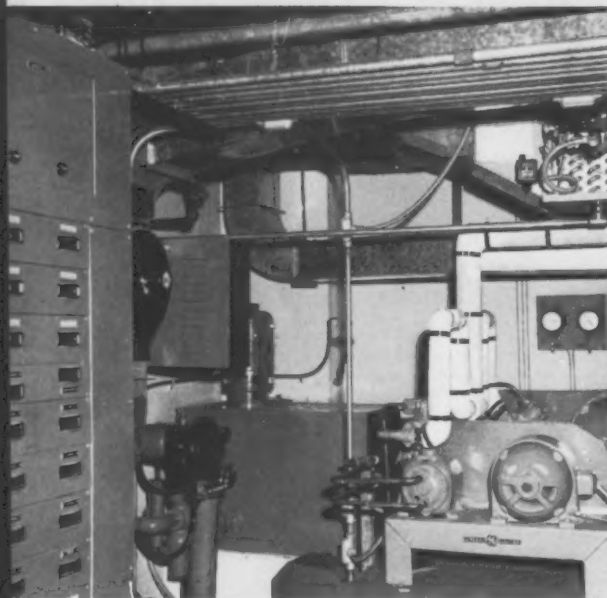


SYSTEM 1

Mechanical refrigeration is used for both sensible cooling and dehumidification in Aerojet's test laboratory where Jato materials are analyzed. Shown here are the 10-hp compressor, pre-cooling coil, blower, and damper controls.

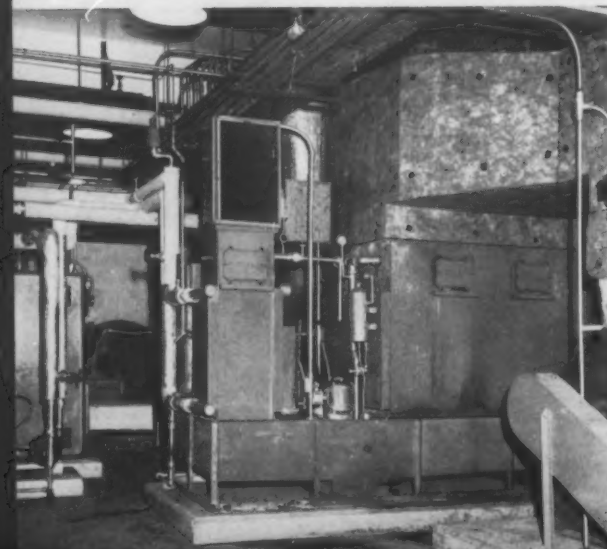
Through close

Air



SYSTEM 2

Close humidity control is of extreme importance in the mixing building, where a Bryant dehydrator was installed to accomplish the necessary dehumidification. One 5-hp and one 10-hp compressor are hooked in parallel.



SYSTEM 3

Six separate zones are served by the system installed in the grinding rooms. Due to the large volume of air handled (approximately 9000 cfm) this Kathabar dehydrator was employed for accurate humidity control.

JATO, the popular abbreviation for "Jet Assisted Take Off", helps planes become airborne in a hurry. But Jato itself makes good use of an assist from the three industrial air conditioning systems installed in the plant of Aerojet Engineering Corp., Sacramento, Calif., where a great deal of Jato development is taking place.

Part of the success of this firm's operation must be given to the temperature and humidity control systems installed by C. G. Hokanson Co. of Los Angeles.

Due to characteristics inherent in the various materials with which Aerojet works in its test laboratory, mixing building, and grinding building, humidity control is of prime importance. Air with a high moisture content would literally "gum up the works".

The air conditioning problem was further complicated by the fact that each building required equipment of different size, operating conditions differ, affecting the heat load and the cubic feet per minute air requirement of each building. Basic design conditions for the systems were the same, 75 F temperature and a maximum relative humidity of 20%, but the cfm capacity of the equipment ranges from 800 to 9,000.

System No. 1 is for the test laboratory where the various materials that go to make up Jato are tested for numerous specifications. The supply of air required in this system is approximately 800 cfm. Because of the small size of this system it was considered economically advisable to do both sensible cooling and dehumidification by means of refrigeration.

The major components of this sys-

control of humidity conditions

Conditioning Aids Jato

tem are a 10-hp General Electric compressor, an evaporative condenser, two direct expansion coils whose operating surface temperatures are below freezing, one direct expansion coil operating above freezing, and one hot gas reheat coil.

Approximately 200 cfm of fresh air is drawn across the coil, surface temperature of which is kept just above freezing by an evaporator pressure regulator. By so doing, the temperature of the air is dropped to approximately 40 F, and a major portion of its moisture content is removed.

The fresh air is mixed with the return air and is discharged through a system of automatic dampers which allows the air to pass over only one of the freezing coils at a time. A liquid line solenoid feeding the inoperative coil is automatically closed, allowing that coil to defrost. A timing device is set to switch coils before the operating coil builds up sufficient frost to impede the air flow.

Close Humidity Control

The air leaves the freezing coil at approximately 25 F, which is the dew point found necessary to keep the laboratory below 20% r.h.

Temperature is controlled by a thermostat operating mixing dampers which bypass a portion of the 25 F air over the hot gas coil. This coil is supplemented by electric strip heat and in order to reheat the supply air to the required temperature to maintain 70 F.

The second system is for the mixing building, which consists of two rooms, one above the other. The

same conditions exist for each room, but each room has its own controls.

In this system, with an air handling capacity of 1300 cfm, it was necessary to use a Bryant silica gel dehydrator to insure achievement of desired humidity control.

Approximately 800 cfm of fresh air passes over a direct expansion coil for precooling and partial dehydration. Then a blower pushes it through the Bryant dehydrator.

This unit is in effect a slow turning drum whose wall contains silica gel retained by screens. The air passing through the silica gel gives up its moisture and goes on to the rest of the system.

As the silica gel has taken up moisture it must also give it off. This is accomplished by using a strip heat regenerator to separate air supply. The air passing through the strip heater is heated to 350 F and is then passed through the silica gel, drying it out. The moisture laden air is exhausted to the outside.

Thus, by the time the drum makes a complete revolution, the cycle of taking on and giving off moisture has been completed. The dry air leaving the dehumidifier is mixed with the return air, resulting in a dew point which is sufficiently low to maintain both zones below 20% r.h.

The mixed air is then discharged by a blower into a two-zone mixing damper set-up, having electric strip heat in the hot deck and a direct expansion coil in the cold deck. A room thermostat in each zone operates a set of mixing dampers, maintaining the required 70 F.

To operate this system, one 5-hp and one 10-hp GE compressors are

used in parallel. The reason for the two compressors is that they provide a three-step capacity which allows for smooth and accurate operation of the system as the requirements are varied from minimum to maximum.

The third system at Aerojet is for the grinding rooms. Although the prescribed end conditions for this system were the same as for the other two systems, 75 F and 20% r.h., the problems to overcome were considerably different.

Six Zones Served

First there were six separate zones to serve. The reused air would have to be washed, as the grinding of materials in the rooms would be from heavy grinding to micro grinding, and dust would get in the air even with the finest dust collectors used. Air capacity of the system would be approximately 9,000 cfm.

Due to the large air handling requirements a Kathabar dehydrator was used to control humidity. This piece of equipment differs basically from the Bryant in that a liquid (Kathene) is used as the dessicant instead of a solid.

The Kathene is sprayed over the passing air and picks up moisture. As more moisture is picked up, the Kathene becomes diluted and since the dehydrating power of Kathene depends largely on its concentration, water must be removed. This is done by passing the diluted Kathene over a hot water coil, which evaporates some water and increases the Kathene concentration. The evaporated water is carried off by means of a separate

Continued on page 63



3½ MILES of vitrified sewer tile were laid under the base slab of this cold storage warehouse to provide air circulation to minimize the danger of frost heavage in the floor.



VENT PIPES of cast iron were connected to the network of tile so that air could pass through by natural circulation. Steam can be piped through these vents in winter if necessary.

A Minnesota warehouse uses natural air circulation to

Lick the Frost Heavage Problem

A NEW approach to the problem of frost heavage, long a major headache in the construction and operation of low temperature storage facilities erected on or below grade level, is being tested in the Merchants Refrigerating Co. warehouse at Hopkins, Minn.

This 239 x 527-foot structure boasts 1,750,000 cu. ft. of refrigerated storage space all on one floor. The building was erected on a concrete foundation with a skeleton of structural steel. To give some idea of the immensity of this job, it took nearly three months to lay the concrete floor slab alone.

To minimize the danger of ice forming in the earth under the floor slab, possibly resulting in time in the buckling of the slab itself, approximately 3½ miles of 8-inch vitrified sewer tile was laid underneath the concrete base in a series of parallel lines across the entire width of the building.

These pipes pitch about 1 foot in the width of the building and are spaced about 5 feet on centers along the entire length. They are connected to cast iron vents opening to the outside of the building.

During the winter, steam will be piped through these vents, if neces-

sary, to keep freezing of the earth to a minimum depth. Natural circulation of air through the pipes is expected to provide ample protection from frost heavage in the milder months. The University of Michigan is cooperating with the owners in making test data studies on this installation, using thermocouples buried in the earth to measure the degree of frost penetration.

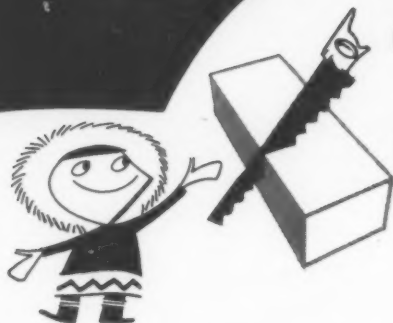
The warehouse is equipped with two blast freezers with a freezing capacity of 100,000 pounds of produce daily. Plans call for the addition of four more at a later date. These units

Continued on page 63

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You'll save considerably on labor costs when you install Styrofoam® in insulating jobs. This lightweight, low temperature insulating material is easily worked by hand or power woodworking tools.

The ease of fabrication is a real plus, but Styrofoam's high resistance to water vapor and its low thermal con-

ductivity are insulating characteristics of paramount importance. Lightweight Styrofoam (Dow polystyrene expanded approximately 40 times) has myriads of individually sealed cells that effectively impede the passage of water vapor and slow the advance of heat. Styrofoam is odorless and non-toxic and resists mold, rot and vermin.

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and AIR CONDITIONING • DECEMBER, 1952

A Careful Year-End Inventory Can

CUT YOUR INCOME TAX BILL

by **Harold J. Ashe**
Tax Counselor

UNLESS a refrigeration dealer exercises great care in the taking of his year-end inventory he may either unwittingly defraud the government on his income tax bill or he may inflate his tax assessment way beyond what it should be. The year-end inventory is an important factor in determining the year's net earnings and, in turn, the amount of the income tax bill.

There is no more excuse for approximating inventory than there is in "guesstimating" gross receipts or overhead expenses. The value of closing inventory should be as exact as reasonable care can make it.

There is nothing in the tax code which justifies a carelessly taken inventory or one in which considerable guessing is indulged in. All too many business houses attempt to simplify their business procedures by slighting their inventory, but the Bureau of Internal Revenue takes a dim view of such short cuts.

The tax law requires that where the buying and selling of goods is an income-producing factor, the net income must be computed by the use of inventories at the beginning and end of each tax year.

Because some goods bought in one year are carried over into the next

year, the value of goods purchased during the year and reported in the income tax return is not, in itself, an indication of the cost of the goods sold during the year. Only by adding to this figure the value of the opening inventory and then subtracting the closing figure can the cost of the goods sold be determined.

This emphasizes why inventory guessing is not good enough for computing net earnings. Every \$100 error in inventory valuation will increase or decrease net earnings by that amount.

Don't "Guesstimate"

Thus, if a year-end inventory, because of "guesstimating", is understated by \$1,000 this means that the stated cost of goods sold has been over-stated by a like amount. And, in turn, this will under-state the net earnings. Likewise, where the year-end inventory is over-stated, the cost of goods will be reduced by a like amount and, in turn, over-state net earnings.

It should be noted that the closing inventory of one year becomes the opening inventory for the following year. The first year's inventory error (whether high or low) then becomes the next year's opening inventory, and with a reverse net earning result.

All merchandise and goods bought for re-sale, either directly or as part

of material on repair and service jobs, must be included in the inventory. This not only includes merchandise ready for sale but also partly finished goods, and goods that must be assembled before it is offered for sale.

In addition, goods in transit must be included. However, goods ordered, but not shipped, are excluded from inventory. Merchandise placed with the dealer on a consignment basis is also excluded.

There are four principal methods of valuing inventory. These are: (1) Cost; (2) Cost or Market, whichever is lower; (3) Retail method; (4) Last-In-First-Out (also called "Lifo") method.

Only the first three months will be discussed, as "Lifo" is complex and should not be used except after careful consideration of all its implications and in consultation with competent tax counsel. It may be used only with permission of the Commissioner of Internal Revenue.

Whichever inventory method is used for purposes of valuing stocks it must (a) clearly reflect the dealer's income and (b) be as close as possible to the best accounting practice in the trade. In addition, the dealer must be consistent in the use of the method he chooses.

From the Bureau's standpoint, it may be that the element of consistency is more important than in the

method elected. One method cannot be substituted for another from year to year to suit changing conditions or to gain temporary tax advantages.

Cost Method

With this method the dealer must use his invoices as a basis for inventory valuation. He adjusts values by deducting trade discounts, and adds shipping and any other expenses which he has had to incur to get possession of the goods. He may or may not deduct cash discounts in arriving at inventory values. However, he must do one or the other consistently.

Cost or Market Method

For determining cost value it is also necessary to consult invoices. In determining market value the market price at inventory time is used.

The important thing to consider in using this inventory method is the phrase "whichever is lower" of the two, cost or market. This test must be applied to each item.

It is not permissible to take two separate and distinct inventories, one at cost and the other at market, and set the inventory valuation at the lower of the two totals. The "whichever is lower" value must be applied to each item, and these lower values in turn must be totaled to determine the closing inventory.

The "whichever is lower" qualification invariably will result in a different inventory figure than either cost totals only or market totals only. In some instances, the lower value will be close to that of cost. However, where price changes between cost and market have been sharp, there might be a wide variation between lower value and either cost or market. This emphasizes the insistence of the Bureau of Internal Revenue that an inventory method be consistently used.

Retail Method

The retail method approximates cost rather than attempting to trace innumerable invoices. It usually saves time. In inexperienced hands it can result, however, in a wide margin of error.

For instance, if a dealer has an

Continued on page 70

Try your best to collect every dollar owed on accounts receivable. But if you can't, just remember you can save many a tax dollar if you . . .

Write Off Uncollectables

PROBABLY most refrigeration contractors err in continuing to carry certain accounts receivable on their books as assets long after these have become uncollectable. In so doing contractors are practicing a form of self-delusion. Moreover, they are looking the income tax implications of writing off such losses.

As time goes on, a contractor may acquire more and more such dubious assets which artificially inflate his net worth, or at least mislead him into believing his net worth is far greater than it is. If these debts are allowed to accumulate and increase in total, year after year, the time must come when such so-called assets will bulk large in relation to other assets, and will sharply distort the picture.

Without relaxing a determination to collect such accounts, a contractor should nevertheless take a realistic view of accounts receivable which are degenerating into uncollectable accounts. At some point these accounts should be removed as accounts receivable and be transferred to profit-and-loss accounts.

As the year draws to a close, accounts which appear to be uncollectable should receive final collection efforts. The reason for this is to demonstrate before year-end whether or not such accounts are, in fact, uncollectable.

If they are uncollectable, they may be written off as bad debts and materially reduce the income tax. This, of course, assumes the contractor uses the accrual method of accounting. That is, the bad debts must have been reported previously as income. Therefore, failure to collect represents a loss.

A final, exhaustive effort to collect certain delinquent accounts is important from an income tax standpoint. This is for the purpose of establishing proof of such debts' worthlessness as a condition of writing them off as bad debts.

In this connection, it is important to keep in mind that bad debts must be deducted in the year in which it is demonstrated they are uncollectable. Thus, if a certain debt does not become uncollectable until 1952, as determined by efforts made to effect collection, it could not properly have been deducted in 1951; neither can it be carried along until 1953. It must be written off in 1952, and be taken as a deduction in the 1952 income tax return.

In some instances, court action may be necessary as a step toward proving or disproving that a certain debt is uncollectable. However, this is not always required. If it can be shown that a legal judgment would be futile, if obtained, then the creditor is not obliged to go to this expense to justify classifying a certain debt as uncollectable.

On the other hand, if no real effort has been made to collect a debt, such an income tax deduction may become suspect.

Occasionally, an account may be written off as uncollectable and be deducted in the income tax return as a bad debt only to be collected in a later year. This can happen no matter how sound the judgment in determining that an account is uncollectable. In such an event, the collected account must be reflected in the income tax return for the year in which the account is collected.

THE HEATING OF AIR CONDITIONING SIDE

BY Wm. Henry Knowlton

Designing a Commercial Warm Air Perimeter Loop Heating System

IT is suggested that any air conditioning contractor interested in using warm air for heating basementless buildings obtain a copy of "Warm Air Perimeter Heating—Manual No. 4" published by the National Warm Air Heating and Air Conditioning Association, together with the series of "work sheets" used for the calculation and design of several types of perimeter systems.

The use of these work sheets will not only expedite the task of designing the system but will also assure results that are very satisfactory to the owner.

Because of the apparent simplicity of perimeter heating, many installations are being designed today on a "hit or miss" basis with little or no thought being given to the sizing of ducts. Unhappily for all concerned, the results will not be discovered until the thermometer hits zero, and then it will be too late to make any basic changes in these systems, as the supply ducts are embedded in concrete.

Obviously it is better for all concerned to have the system designed correctly in the first place.

Under the dictates of current practice, perimeter heating systems are limited to 100,000 Btuh. supplied by one furnace. For larger areas, more furnaces may be installed as needed, providing the added advantage of "zone" control of each unit.

While the perimeter method has found wide acceptance in the resi-

dential field, particularly in basementless "ranch type" homes, it has equal value in the commercial field. Each year many thousands of buildings are constructed—including gasoline stations, garages, professional offices, clinics, and factory offices—which might be heated entirely, or in part, by the perimeter method.

As a "work problem" let us assume we have a two-bay "super" type gasoline station, which has an overall heat loss of about 90,000 Btuh. Along with the two large work bays the building also has a showroom, parts and accessories stock room, utility room for furnace, hot water heater, and air compressor, and two lavatories.

Glass Areas Cause Problem

We will also assume that all rooms except utility room have one or more outside exposures, that the work bays have large plate glass areas on two sides with overhead doors on the third, and that the showroom also has two large plate glass windows. The building measures 48 x 24 feet.

Other limitations on our "design problem" will be that the perimeter of the building supplied by one furnace be no more than 210 feet, and that no uninsulated feeder duct be over 30 feet in length. Where an insulated trunk duct is used, its length should not be over 50 feet.

Using the Warm Air Association work sheet No. 41-B (for larger struc-

tures) we find that all rooms have a heat loss of 90,000 Btuh. and that a furnace rated at this capacity, at the register, will be required. If the furnace is rated at the bonnet, the bonnet capacity should be 1.18 times the heat loss of the structure, to allow for duct losses.

In computing the total heat loss for any basementless building it is vitally important that the correct Floor Heat Loss Factor be used. Using the Warm Air Association work sheet, Table 1, and assuming that we are designing to -10F, with average floor insulation, we have a factor of 90. To find the heat loss through the floor we multiply the *length in feet of exposed edge of floor in each room* by the factor, and include this quantity in our heat loss totals.

It is easy to see that if this heat quantity were neglected (as often has happened in the past) our totals for each room would be in error.

Our next step is to locate the perimeter loop on the plan, avoiding plumbing stacks, and running under built-in cabinets of various kinds. In a small commercial building of the type under consideration here, this does not present any serious problems.

Our next step is to locate the registers. These should be placed above the perimeter duct and centered under the largest glass areas. In rooms having a loss of over 8,000 Btuh., use two or more registers, allowing a heat loss of from 6,000 to 8,000 Btuh. for each register.

To determine the number of feeder ducts, divide the building heat loss by 15,000 to find the *probable* number of feeders, although this number may have to be changed later to meet other requirements.

In our example we would divide 90,000 Btuh. by 15,000 and thus initially estimate the need for six feeder ducts, although more may be needed.

Feeder ducts should be connected to the perimeter loop ducts according to the following principles:

1. Distance between feeder connection points in the loop should never be over 35 feet.
2. There should not be more than three registers between any two feeders.
3. No feeder duct connection should be *less* than 18 inches from the nearest register.
4. No register should be more than 15 feet from nearest feeder.
5. Run feeders under bath or lavatory if possible to keep floor warm.
6. If registers are over 20 feet apart, run additional feeder duct between these registers.

7. Registers should not be installed on feeder ducts.

Although on first reading the above principles may seem quite complex, it is easy to see that their purpose is to assure even distribution of heat around the entire perimeter of the building.

As feeder ducts are sized from the number and location of registers, the registers must first be placed in accordance with the heat loss of each area.

Calculate Heat Losses

As the number of registers and their location is dependent upon the heat loss of each areas, let us assume that the heat losses are as follows:

2-Bay Work Area	50,000
Show-Room	16,000
Women's Lavatory	6,000
Men's Lavatory	6,000
Storage Room	12,000

Total 90,000

Inasmuch as in this instance the utility room is in the center of the struc-

ture, no heat supply should be required.

On the basis of these figures we have located seven registers in the two-bay work area, two registers in the storage space, two registers in the showroom, and one each in the lavatories. This is based on an average capacity of from 6,000 to 8,000 Btuh. per outlet.

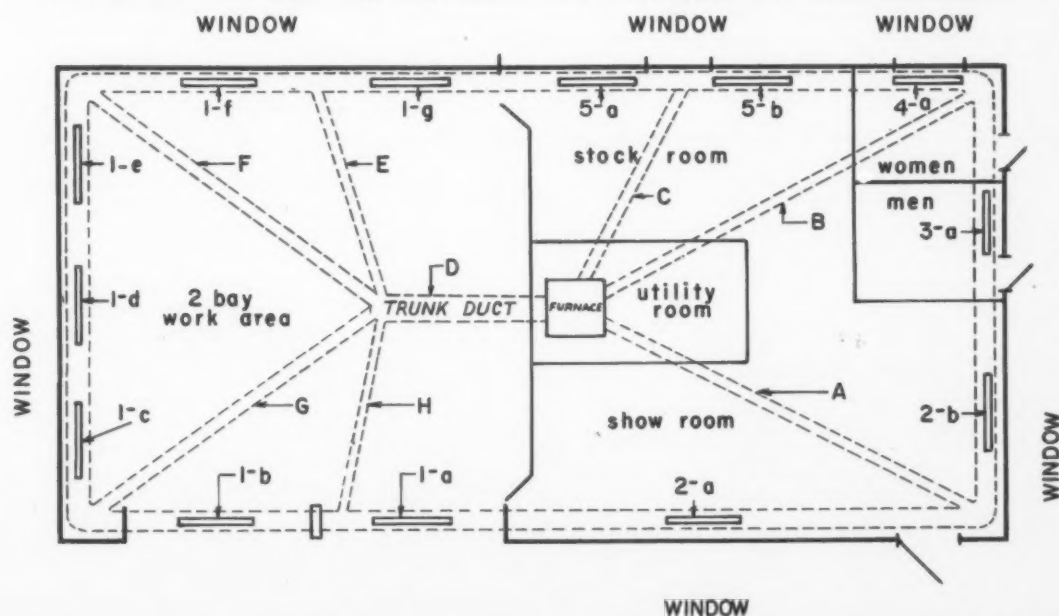
Before starting to use the "Feeder Duct Sizing Table" on Page 4 of the Warm Air Association work sheet, it would be a good idea to number all registers according to their room location. For instance we have numbered the registers in the work area as 1-a, 1-b, 1-c, 1-d, 1-e, 1-f, and 1-g, the ones in the showroom as 2-a and 2-b, etc. Each duct has been designated by a letter, A, B, C, D, etc.

As either end of this building could be heated with or without a trunk duct system, we will work out our example to show both types of application.

Beginning with the showroom, registers 2-a and 2-b each have a

Continued on page 70

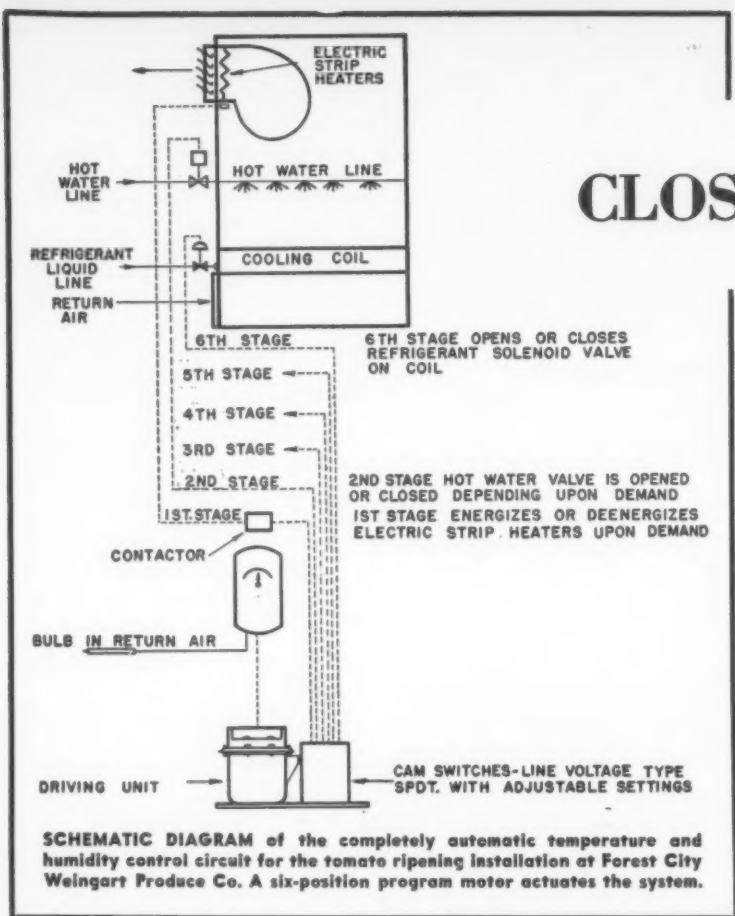
Perimeter Heating System for a Typical Gas Station



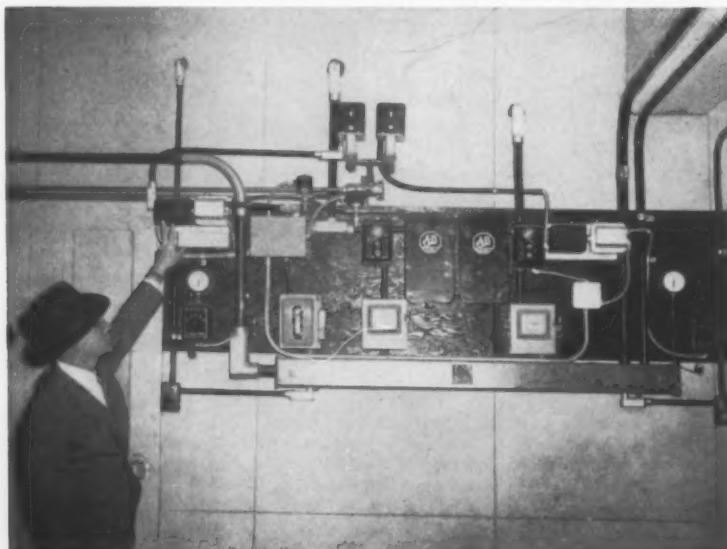
SCHEMATIC LAYOUT of a perimeter heating system for a modern two-bay gasoline station. The extensive glass window areas must be taken into consideration in planning such a system. In addition to the small windows in the stock room and the ladies' room, virtually the entire

front and side walls of the showroom are of plate glass, and the side and rear of the service bays are paneled with glass from about shoulder height up. Note that all feeder ducts are designated as A, B, C, etc., while all registers are identified as 1-a, 1-b, 2-a, etc.

CLOSE CONTROL



PROGRAM MOTOR is pointed out by Hugo Smith, sales engineer for Refrigeration Sales Corp., contracting firm which installed the job. The control panel is mounted just outside the door of one of the two tomato ripening rooms. Identical systems are provided for each of the two rooms.



TOMATOES, like most other types of produce, are grown only during certain seasons of the year. They are picked green and are shipped to wholesale produce firms in that condition. The produce wholesaler who can control the ripening of these tomatoes and time his shipments to dealers to coincide with the peaks of the fluctuating market is in a decidedly advantageous position.

Forest City Weingart Produce Co. of Cleveland, Ohio, can do just that, thanks to a pair of closely controlled storage and ripening rooms engineered and installed by Refrigeration Sales Corp., Cleveland contractor.

A judicious mixture of cooling, heating, and humidity is all-important in the ripening process, if any degree of control is to be exercised. The equipment installed in the Weingart plant provides all three of these elements in critically controlled quantities.

The rooms themselves, each measuring 33 x 15 feet, were erected by Armstrong Cork Co. and are equipped on all sides with 4 inches of cork insulation. Two identical systems were installed, one for each of these rooms.

These systems were designed to heat the produce storage rooms in the range between 70 and 55 F, and cool them in the range between 55 and 35 F, all with a minimum of 2 degrees variation between ceiling and floor temperatures on either heating or cooling cycles.

Completely automatic control was provided to switch the systems from heating to cooling and vice versa, so that all the operator need do is set the thermostat for the desired tempera-

IS THE IMPORTANT THING

... in produce ripening. Here's how a Cleveland contractor devised an ingenious system which paid for itself in one full year of operation

ture. This eliminates the need for constant attendance and insures the maintenance of proper conditions even when the plant is closed during weekends and holidays, regardless of any fluctuations in outside temperatures.

Calculations for equipment selection were based on the following conditions: 85% humidity on cooling, 95% humidity on heating, and 95 F temperature surrounding the coolers during the summer months. With these factors in mind, each system was planned to make possible the cooling of 50 tons of tomatoes from 55 to 42 F in 16 hours, or 20 tons of

mixed vegetables from 70 to 40 F in the same period of time.

To meet these demands, each room was equipped with a 5-hp Carrier compressor, a Halstead & Mitchell condenser of similar capacity, a Carrier cold diffuser with low velocity outlets, an Alco liquid solenoid, a motorized hot water control valve, a 6-position program motor, a sensitive thermostat, and a Carrier F.M. expansion valve.

A 66-gallon water heater and two 5000-watt electric heaters also were incorporated into the system.

Heart of this system, and the factor which makes such critical tol-

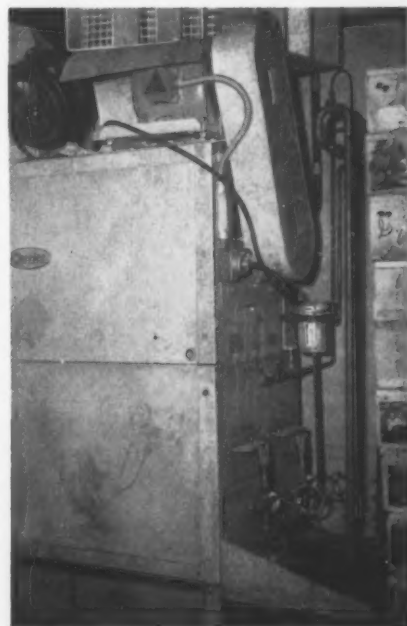
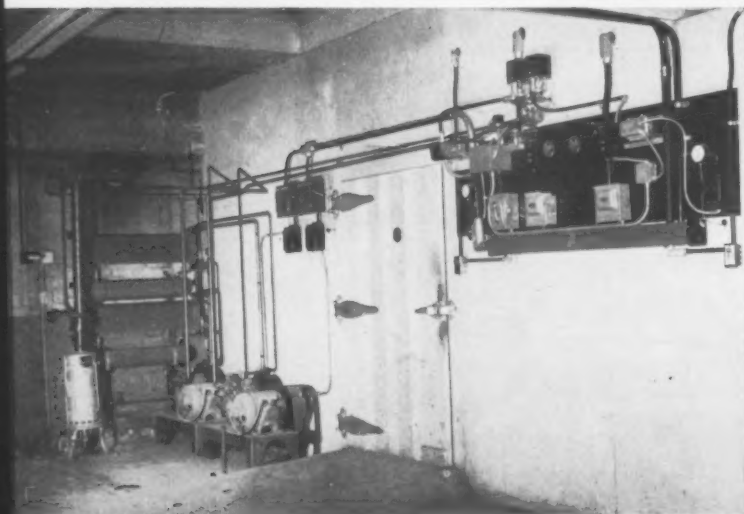
erances of operation possible, is the unique but positive Barber-Colman control set-up furnished by Slawson Equipment Corp., Barber-Colman distributor in the Cleveland area. Controls for the two storage rooms were identical in every respect.

In operation, the remote bulb microtherm actuates an adjustable speed, oil-immersed program motor which, when in the full heating position, acts to open the 1/2-inch hot water solenoid valve and turn on the electric heater located in the storage room.

As the room temperature approaches the setting of this remote

COLD DIFFUSER with low velocity outlets is located in each of the rooms. Spray heads are installed inside diffuser cabinet.

EQUIPMENT ROOM is located just outside door of cooler, with condensers and compressors at left, control panel at right





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bulb microtherm, the heaters are first de-energized. Then, upon a further call for cooling, the hot water valve is closed. Should the internal load continue to rise, the instrument will proportion the program motor, which in turn will open the refrigerant solenoid valve and allow the cooling system to be started.

Maximum Flexibility Provided

The application of this type of equipment lends itself most conveniently to an automatic changeover from heating to cooling cycles, and also allows as many steps of either cooling or heating as may be desired. Furthermore, it eliminates the possibility of both cooling and heating ever coming on at the same time due to errors in adjustment or in setting the individual room thermostats, whether they be single stage, two stage, or proportioning.

In the ripening of tomatoes, which is accomplished in the range between 55 and 5 F, depending upon marketing conditions, the biggest single factor is humidity. For this reason, six spray heads were installed in each cold diffuser, each head having a capacity of 1 gpm, or a total of 6 gpm for each diffuser. When the program motor calls for spray, humidity is built up to 100%, then sensible heat builds up and the temperature goes up.

Humidity Averages 98%

Fans in the cold diffusers are set to run continuously.

In the heating cycle, the hot water system has proved so effective that actually the electric heaters have never cut in. And this despite the fact that water for heating is being taken in at 90 F, a much lower figure than originally calculated. The water is never recirculated, due to the danger of acidity in the water.

With the system controlling at 65 F and water entering at 90 F, the water has been checked just before entering the drain and has been found to be cooled down to the control temperature of the room. While design conditions called for a minimum humidity of 90% on the heating cycle, in actual operation it has never dropped below 95%, and normally runs 98%.

Results of this system have far

Continued on page 78

NEWS OF THE INDUSTRY

DEFENSE AGENCY TO STANDARDIZE PARTS

A program to standardize components of refrigeration and air conditioning equipment used by the Department of Defense has been undertaken by the Defense Supply Management Agency of the Department of Defense with the support of the refrigeration industry.

A Munitions Board Industry Advisory Committee, composed of representatives of eleven manufacturers of such equipment selected to reflect a cross-section of the industry by size of company, is collecting data necessary to complete the work. A subcommittee is considering the particular problem of compressors.

The committee will develop plans for reducing the number of types of refrigeration and air conditioning units used by the three military departments to attain the maximum practicable interchangeability of parts and components. Ultimate objective of the standardization effort is to simplify spare parts supply and maintenance in order to increase efficiency and effectiveness of military supporting services to combat areas.

Members of the main committee are: Donald French, Carrier Corp.; B. S. Booher, General Motors Corp.; L. W. Larsen, Tecumseh Products Co.; R. F. Lauer, York Corp.; J. L. Ditzler, Westinghouse Electric Corp.; C. L. Coulter, Lehigh Mfg. Co.; S. D. Ploeger, Servel, Inc.; S. D. Loveley, Chrysler Corp.; O. H. Buschmann, Copeland Refrigeration Corp.; Frank Hawk, Brunner Mfg. Co., and K. A. Gould, General Machine and Mfg. Co.

Rear Admiral J. W. Fowler, USN, (Ret), Director of

the Defense Supply Management Agency, is chairman; Nathan Brodsky, Deputy Director of the Defense Supply Management Agency, is deputy chairman, and Kenneth A. Simmons, Office of Standardization, Defense Supply Management Agency, is government liaison representative of the committee.

ATLANTA FIRM TO REPRESENT SERVEL

Appointment of the Stevens-Berry Co., of Atlanta, as manufacturers' representatives for Servel Supermetec electric condensing units in the southeastern territory has been made by O. J. Dail, assistant vice president in charge of Servel Electric Refrigeration Div.

The principals of the Stevens-Berry Co. are O. E. Stevens and Ralph M. Berry. Their headquarters in Atlanta are at 842 Kipling Drive, N. W.

TENNEY PLANS NEW UNION, N. J. PLANT

Tenney Engineering, Inc., has completed plans for a new 30,000-sq. ft. plant to be constructed in Union, N. J. on Springfield Road just off route 29. Located on a seven-acre tract of land, the plant will be used in the manufacture of Tenney environmental test chambers. It will consolidate two existing Newark environmental chamber plants. Tenney's "low side" refrigeration products will continue to be manufactured at the Baltimore plant.

FROZEN FOOD SHOW IS SET FOR APRIL

The National Frozen Foods Industries Exposition, under the management of the Frozen Food Expositions of America, will be held at the Grand Central Palace, New York City, April 20-23, 1953.

MITCHELL TO MAKE UNITS FOR SEARS

A new line of window type room air conditioners to be sold by Sears Roebuck & Co. will be produced by Mitchell Mfg. Co., it was announced by B. A. Mitchell, company president.

The new line, which will be marketed under the Coldspot label, will be available in both the company's retail outlets and mail order division. Included in the line will be 1/2, 3/4, and 1 ton units.

Mitchell has geared its operation to produce a minimum of 50,000 Coldspot units, and it is reported that Sears' initial order was in excess of 20,000.

During the 1952 selling season, Sears stores throughout the country sold Mitchell room air conditioners which were purchased by Sears from Mitchell distributors. The new line will be produced in a separate manufacturing facility.

CARRIER EXPANDS MANUFACTURING FACILITIES BY 40%



FORTY PER CENT MORE SPACE for its production, warehousing and offices has been obtained by Carrier Corp. through the purchase from Syracuse University of a 110-acre area, shown within the white line in the photo, for \$3,600,000. Together with the two presently owned buildings, at right and in the foreground, this will give Carrier 1,400,000 sq. ft. of modern, single-story manufacturing space in the Thompson Road manufacturing district. In addition to the Thompson Road plant, another 1,100,000 sq. ft. of space is provided in the Geddes Street plant of Carrier, also in Syracuse.

FRESH'ND-AIRE AND CORY MERGE SALES

Plans for the immediate consolidation of the Cory and Fresh'nd-Aire national sales organizations have been announced by J. W. Alsdorf, president of Cory Corp., the parent company.

Sales of Fresh'nd-Aire treatment products were previously handled through manufacturers sales representatives. In the future all Fresh'nd-Aire products will be sold by the Cory full time national field selling organization.

Alsdorf said the consolidation was prompted not as a reflection on the activities of the sales representatives, but because the recent expansion of Fresh'nd-Aire into the field of air conditioning and dehumidification requires the attention of full time sales employees.

The Cory organization consists of five separate sales divisions and approximately 50 men covering territories throughout the continental United States.

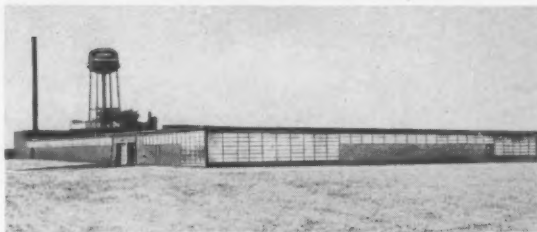
CHANGE IN NAME OF BLOWER MFRS. ASSN.

The Air Conditioning Blower Manufacturers Association is the new name of the Furnace Blower Manufacturers Association, organization officials announce.

At the Association's recent meeting in Cleveland, the adoption of a name more suited to the members' broad field of business was agreed on. Members felt that air conditioning is a more inclusive term than furnace blowers and is thus more descriptive of their activities.

Beginning his term as new president of the association is Frank Gibbons of the Viking Air Conditioning Corp. Other new officers elected at the recent meeting were Walter Curtis of the Peerless Electric Co., vice-president, and Ward Brundage of the Brundage Co., secretary-treasurer. Ben Krause of Air Controls, Inc. was named chairman of publicity and has as his associate, Thompson Morrison of Morrison Products, Inc.

CORY TO MAKE CONDITIONERS HERE



PLANT SPACE for use in the manufacture of air conditioners and dehumidifiers has been acquired by Cory Corp. by long term lease of an additional manufacturing plant in Grayslake, Ill., 35 miles northwest of Chicago. The new facilities embrace approximately 52,000 sq. ft. on 14½ acres of land. The one-story plant was constructed about four years ago. Work is being started to set up machinery and equipment for mass production of room air conditioners and dehumidifiers. Eventually, the company hopes to transfer all Fresh'nd-Aire manufacturing operations to the new plant—air circulators, heaters, fans and humidifiers. The company expects to have national distribution of air conditioners and dehumidifiers for the 1953 sales season.

CORBIN AND PLATZ TO HANDLE TENNEY

Tenney Engineering, Inc., N. J. announces the appointment of the Corbin and Platz Sales Agency of Kansas City, Mo. to handle its midwest territory.

The sales agency will handle Tenney's line of "low-sides"—cooling units, coils, expansion valves, ice makers, and its Defrostolator.

Both principals of the Corbin and Platz Sales Agency are former Viking sales executives and engineers.

LA CROSSE REPORTS 21% GAIN IN SALES

Officials of La Crosse Cooler Co., have reported net sales at the end of the third quarter this year to be approximately 21% ahead of 1951 sales for a similar period.

The substantial gain in sales is attributed to a rapidly growing dealer organization and the addition of new products placed on the market about a year ago. An increase in factory production facilities, approximately 50,000 sq. ft. completed late in 1950, has provided the capacity to meet increased demand for La Crosse commercial refrigeration.

La Crosse expects to add more new products, currently in experimental stages.

TWO NEW G-E HEATING OUTLETS

The Wyoming Oil Co., Wyoming, Pa., and the Hall Brothers Oil Co., Concord, N. H., have been appointed as retail distributors for G-E home heating and cooling equipment, it was announced recently by General Electric's Home Heating and Cooling Department.

Wyoming Oil Co. will handle the G-E line of oil-fired boilers and furnaces. Hall Brothers' distributorship includes both G-E oil and gas-fired units as well as G. E.'s residential packaged air conditioner.

450-HOME PROJECT AIR CONDITIONED

The largest housing project in the country to offer year-round air conditioning as a standard feature was announced to the public recently with the opening of three model homes in Westbury, L. I.

Known as "Birchwood at Westbury", the development will have 450 air conditioned homes when completed. Herb and Sy Sadkin are the builders.

General Electric's new "Air-Wall" system of heating and cooling is being used.

The 450-home Sadkin project is in the \$20,000 to \$24,500 class.

CARRIER TO EXPAND CHARLOTTE OFFICE

A new expanded office for Carrier Corp. will be built in Charlotte, N. C., to handle the increasing demand for air conditioning in the Carolinas.

The modern, air conditioned office will be located at 2610 South Blvd. and will house the direct and dealer sales office of Carrier Corporation, now located at 228A North College Street, plus a pipe fabricating shop, now located at Anderson, S. C. Occupancy of the new building is scheduled for November.

The building will be constructed so that it can readily handle further expansion of the staff and shop facilities. Continuing in charge of Carrier operations will be Robert S. Fullerton, branch manager of direct sales to consumers and contractors in the Carolinas, and William L. Sammons, district manager in charge of sales to distributors and dealers in the Carolinas and southern Virginia.

TRANE ADDS 7 TO SALES STAFF

New appointments to Trane sales offices throughout the country were announced recently by Thomas Hancock, vice president in charge of sales for The Trane Co., La Crosse, Wis.

The new Trane representatives are recent university graduates and hold degrees in engineering. Each has also completed the Trane graduate training program. Included are:

Walter T. Ritter, appointed to the Oklahoma City sales office; Loy Frank Thompson, appointed to the Greensboro, N. C., sales office; Allen L. Smith, appointed to the Columbus, Ohio, sales office; George W. Shepherd, appointed to the New Orleans sales office; Walter Lambert, Jr., appointed to the Pittsburgh sales office; James Gledhill, appointed to the Newark sales office; Murray W. Binkley, appointed to the Detroit sales office.

MINERAL FIBER INSTITUTE ELECTS

Frank Christenson of Refractory & Insulation Corp., New York, was elected president and chairman of the board of the Industrial Mineral Fiber Institute, formerly the Industrial Mineral Wool Institute, at its eleventh annual meeting at Melvin Village, N.H. During the last year, Christenson, executive vice president of his company, was treasurer of the association representing 18 manufacturers of industrial mineral fiber in the United States, Canada and abroad.

At the Melvin Village meeting, J. S. Blunt of Holmes Foundry Co., Ltd., Sarnia, Canada was elected vice president and W. M. Ehrlich of M. H. Detrick Co., Aurora, Ill. named treasurer of the Institute. Directors for the coming year are G. J. Christner of Eagle-Picher Sales Co., E. R. Stevens of Baldwin-Hill Co., David Barthold of Owens-Corning Fiberglas Corp., and N. L. Morell of N. L. Morell.

YORK TO CONDITION NEW TVA ADDITION

York Corp. has announced that it is supplying equipment to cool the new four-story addition to the Tennessee Valley Authority office building now under construction in Chattanooga, Tenn.

Installation will be made by the firm's distributor in Chattanooga, Southern Blow Pipe and Roofing Co.

Original portion of the seven-story TVA building, which was completed last spring, is also air conditioned.

BAC NAMES TWO NEW SALES AGENTS

Baltimore Aircoil Co., Inc., manufacturers of evaporative condensers and cooling towers has announced the appointment of two new representatives.

Guy W. Gentry of Oklahoma City will cover Oklahoma and western Arkansas. Harry G. Mouat of Birmingham, Ala. will cover Alabama and northwest Florida.

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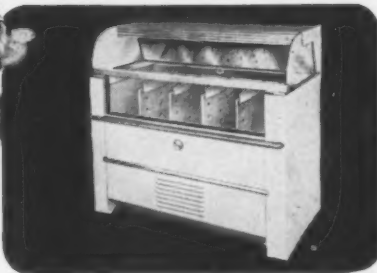
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"SNOW WHITE" cabinet that displays your merchandise at its TEMPTING best. Full length mirror doubles display area. Big 4-pane Thermo-pane glass front puts frozen food packages right before customers' eyes. Shows 'em and Sells 'em. The GF-1051 and its companion GI-1151 (ice cream cabinet) were designed of uniform size to permit side by side displaying for maximum merchandising effects.

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WINDOW UNITS COOL JEWELRY STORE



TWO AIR CONDITIONERS installed in small windows above the store front allows a Winter Haven, Fla. jeweler to utilize all window and wall area for display purposes while keeping the store cool even in the hottest weather. The two units were installed by the Ellsworth Electric Co. of Winter Haven, Mitchell dealer for that area. The units are mounted nine and a half feet above the floor and are controlled by special remote switches.

PENN OPENS FIVE NEW WAREHOUSES

Five new district warehouses have been established by Penn Controls, Inc., according to R. H. Luscombe, general sales manager.

The new warehouses are operating in conjunction with district sales offices and are strategically placed to give increased service to customers in key distribution centers.

Warehouses are now in operation in the Boston, New York, Philadelphia, Cleveland and San Francisco areas.

The Boston warehouse, under the direction of A. W. Barr, district manager, is located at 175 Adams St., Newton, Mass. The New York warehouse, supervised by district manager George Sanders, is located at 8111 Bergenline Ave., North Bergen, N. J. The Philadelphia district warehouse, managed by A. L. Rubel, is at 4503 N. Broad St. The Cleveland warehouse, J. F. Kinney, manager, is at 6207 Superior Ave. The San Francisco district warehouse is located at 920 Grayson St., Berkeley, Calif. District manager E. T. Layport is in charge of this warehouse.

SEES HUGE FUTURE IN HOME FIELD

All-year home air conditioning bids fair to become the "Cinderella" industry of the 1950's, John A. Gilbreath, assistant vice president in charge of air conditioning for Servel, Inc., predicted recently.

"You would almost have to be a part of the industry itself to appreciate the tremendous amount of interest in all-year home air conditioning," he said. The interest he explained has been stimulated in large part by the increasing number of people exposed daily to air conditioning in places of business and recreation.

"The public is sold on all-year air conditioning and it is now up to industry to demonstrate that it is in a position to do the job," Gilbreath said.

Among the things industry must do he listed:

Educate architects to the need of designing homes specifically around all-year air conditioning.

Educate heating and plumbing engineers to the needs for simplifying installations.

Educate both government and private lending agencies

on the true benefits of all-year air conditioning for a proper mortgage valuation on the equipment.

Continue research and development to further reduce both equipment and installation costs.

Tracing the development of air conditioning since the early part of the century, Gilbreath said that in 1951 it had reached the status of a billion dollar industry. He said much of the growth had come since 1940 with sales in 1951, 600% over those of 11 years earlier and 300% over those of 1946. He foresaw an increase of 25% possible for all-year home air conditioning this year.

SELF-SERVE SELLS MORE, SURVEY SHOWS

Self-service meat shoppers purchased more products in about one half the time it took a similar number of shoppers to complete their purchases in service meat departments, according to a Du Pont consumer survey.

Made during a normal shopping week in stores throughout the country, the study disclosed that 2,700 shoppers in self-service meat departments purchased 5,927 items in 116.7 hours, while an equal number of service meat shoppers spent 198 hours making 5,467 purchases.

During the weekend, the survey pointed out, the rate of meat sales and the time saved by self-service meat shoppers was even greater than on previous days. On Friday and Saturday, a group of self-service shoppers bought 9% more meat products in 55% less time than a comparable group of service shoppers.

Emphasizing the important part "impulse" buying plays in building meat sales, the survey said a recent Du Pont study reported that fresh meats in service departments have an impulse rating of 14.8%; luncheon and smoked meats, 33.6%. But in fully prepackaged meat departments the impulse rate was 19.9% and 48% respectively.

SUB-ZERO APPOINTS 6 MORE AGENTS

The appointment of six new representatives is announced by Sub-Zero Products, Cincinnati 29, Ohio, manufacturers of low temperature industrial chilling machines. The Marshall & Huschart Machinery Company of Indianapolis, will represent Sub-Zero in western Kentucky and all but six northwestern counties of Indiana. The Chicago area will be served by Bernard E. Aldridge, IndustraTool Associates, Chicago.

Two foreign representatives for Sub-Zero have been appointed. Severance Tools of Canada, Ltd., Toronto, Ontario, will handle all Canadian orders. Japanese customers will be served by Marubeni Company Ltd., Tokyo.

The St. Louis area will be served by the Thermorite Corp., St. Louis. New England states, including Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire and Maine will have L. Heres DeWyk & Co., Ansonia, Conn.

COOLING AN AID TO "MENTAL" WORKERS

Tests conducted by the Mitchell Air Conditioning Research Foundation show that the most efficient way to maintain the best temperature environment for performing mental work is done by means of air conditioning.

Science has found that efficiency drops markedly as temperatures rise above the mid 70 degree range. Body heat rises rapidly because the atmosphere is unable to absorb the extra heat generated.

Among the many ways of combating this condition, air conditioning is the most efficient because it not only cools the air but dehumidifies it as well, allowing the evaporation of perspiration to cool the body naturally. Air conditioning also affords relief from asthma, hay fever and other airborne allergies by removing 99.9% of solid matter, including pollen.

about PEOPLE

Arthur H. Beasley has been appointed manager of the Memphis sales branch for Wagner Electric Corp. He succeeds A. Callaway Allen, who recently became sales manager of Wagner's electrical division. After joining the company in 1936,



Arthur H. Beasley

Beasley was assigned to the Cincinnati sales branch, and was later transferred to the Chicago branch where he remained until his promotion.

M. J. Hackney has been appointed supervisor of sales training of General Electric Co.'s air conditioning division. Hackney was formerly a sales specialist of G-E packaged air conditioning equipment and refrigeration machines. He joined the company in 1949. Prior to coming to G.E. he was assistant sales manager of York Distributors, Inc., Long Island City, N. Y.

Two appointments in its sales staff have been announced by Kelvinator Div., Nash-Kelvinator Corp. **G. T. Etheridge** has been appointed western regional manager and **O. A. Norman** has been named sales manager of defense products. Etheridge, who joined



G. T. Etheridge

Kelvinator's commercial sales staff in 1941, had served as sales manager, defense products, since 1951. He will be responsible for operations of the

company's field sales organization throughout the middle west. One of Norman's principal responsibilities will be administration of the firm's contract with the Air Force at Wright-Patterson Air Force base. Norman joined the Kelvinator advertising department in 1931. He has been a field sales representative for the company since 1945.

Len K. Wright, Jr. and **Jack L. Sellars** who handle the refrigeration division of the L. K. Wright Co.,



L. K. Wright, Jr.



J. L. Sellars

have been appointed direct factory representatives of Remco, Inc. and Halstead & Mitchell for the seven southeastern States. Previously in business for himself with a working interest in Mann-Wright Co., Orlando, Fla., Wright sold his interest in the company and joined his father in L. K. Wright Co. in 1950. Before joining the company in 1948, Sellars was a radio announcer in Knoxville, Tenn.

Aaron R. Kaminsky, application engineer in the New York office of the Bush Manufacturing Co. and the Heat-X-Changer Co., has been transferred to the position of sales engineer with headquarters in Dayton, Ohio. Before joining the Bush and Heat-X-Changer organizations, Kaminsky was connected with one of the

leading machine distributors in the New York area. He will represent both Bush and Heat-X in western Ohio, Kentucky, and West Virginia areas. **Edgar L. Disbrow** replaces Kaminsky as application engineer in the New York office.

William J. Weir has been appointed sales manager of wholesale accounts for Chase Brass & Copper Co., Inc. Weir, who will specialize in the sale of brass mill products to wholesale accounts purchasing for resale, began work for



William J. Weir

Chase in the metallurgical department of the Chase-Cleveland mill. He served as condenser tube sales manager in Cleveland before being transferred to Waterbury in the same capacity.

C. D. Bradrick has been appointed manager of manufacturing of the General Electric Co.'s Heat Pump Dept. Bradrick was formerly manager of industrial engineering for the manufacturing department of the G-E Air Conditioning Div. He has been with the company since 1950. Prior to joining G-E he was plant manager of the Sanitary Refrigeration Co., Fond-du-Lac, Wis.

Two appointments have been announced by McCray Refrigerator Co.

Jack Canady has been promoted to sales manager of Palmer Mfg. Corp., a McCray subsidiary in Phoenix, Ariz. **George W. Benson** has been appointed assistant advertising manager for both McCray and Palmer. Canady recently held the position of secretary-manager of the Appliance Merchandisers Association. Benson was form-



G. W. Benson

erly head of the advertising art department of the New York Herald Tribune before joining Palmer four years ago.

B. L. Lerch, formerly Chicago factory branch office manager for General Controls Co., has been appointed regional manager for the middle western territory. Lerch will supervise General Controls offices in Minneapolis, Milwaukee, St. Louis, Chicago, Indianapolis, and Des

Moines. To supervise the eastern seaboard area, General Controls also has named **Russell Strongman** as regional manager, covering factory branch offices in Newark, New York, Hartford, and Boston.

T. L. Smith, formerly Chicago district sales manager, has been appointed sales manager of the Residential Air Diffuser Div. of the W. B. Connor Engineering Corp., Danbury, Conn.

Karl E. Johnson, who for the past six and one-half years has represented J. F. Pritchard & Co. as Chicago district sales manager, has been named to succeed Raymond C. Kelly as manager of Pritchard's equipment division in Kansas City. Succeeding Mr. Johnson in Chicago will be **E. Allen Bailey**. Kelly resigned to accept the position of executive manager of the Cooling Tower Institute, an association of major manufacturers of industrial water cooling equipment. He was one of the organizers of the Institute, and served two consecutive terms as its first president.



K. E. Johnson

Donald W. Dailey has been named a vice president of Servel, Inc. Dailey joined Servel two years ago and is responsible for the development of the company's portable Wonderbar "refrigerette" in which he pioneered the use of plastics for household refrigerators. Before coming to Servel Dailey served as designer for a number of appliance firms and is credited with many contributions to the design of General Electric, Fairbanks Morse, and Philco refrigerators.

Allan W. Cox has been appointed manager of low temperature insulation sales for Owens-Corning Fiberglas Corp. Cox, with offices in the firm's headquarters in Toledo, will coordinate sales activities relating to the uses of Fiberglas installations in cold storage facilities, including frozen food lockers, warehouses and areas storing meats and other perishable items, and for certain industrial applications. He has been with Cork Insulation Co., Inc. for more than 16 years and for the past four years has been district manager in the St. Louis office of that firm.



Allan W. Cox

insulation sales for Owens-Corning Fiberglas Corp. Cox, with offices in the firm's headquarters in Toledo, will coordinate sales activities relating to the uses of Fiberglas installations in cold storage facilities, including frozen food lockers, warehouses and areas storing meats and other perishable items, and for certain industrial applications. He has been with Cork Insulation Co., Inc. for more than 16 years and for the past four years has been district manager in the St. Louis office of that firm.

For Recognized Quality - Extra Gallons

Sell Your Condensing Unit

- Filtrine Water Coolers



Mess Hall-Cafeteria Cooler



Photographic-X-Ray Cooler



Typical "Packaged" Circulating Chilled Water System

Promote your own condensing unit sales with Filtrine's 20-year-life construction...high capacity... Super Storage... more than 40 years' dependability.

COOLERS FOR MESS HALLS - CAFETERIAS

Conform with Fed. Spec. 00-C-566b

COOLERS FOR X-RAY & PHOTOGRAPHY

PACKAGED CIRCULATING CHILLED WATER SYSTEMS

REMOTE COOLERS FOR ALL USES

Sell your condensing unit with Filtrine Stainless Steel or Duco finished cabinets, equipped to suit with top/side shelves, bubblers, glass-fillers. Can be Taste-Master equipped to remove chlorine, rust, sediment from water.



Taste-Master

Sell your condensing unit with Filtrine models repeatedly named by V.A., Signal Corps, Air Force, etc. for X-ray, and photo-labs. Under counter design and floor-mounted models with stainless steel work-table top. Filters (extra) to prevent scratched and pin-holed negatives.

Sell your condensing unit! Systems for drinking or processing water—completely packaged with pump, controls, your condensing unit factory installed. Capacities 5—400 g.p.h.; storage 5—150 gals. Filters and Rectifier-Dechlorinators (extra) to insure taste-free, sparkling water.



Remote Model Coolers

Sell your condensing unit with remote models for new and replacement jobs—all applications. Capacities 10—1000 g.p.h.; storage 7—300 gals. Filters, Rectifier-Dechlorinators available for all sizes.

Filtrine
HIGH EFFICIENCY

Write for Catalog and Specification Guide

FILTRINE MANUFACTURING COMPANY • BROOKLYN 5 • N. Y.

"Water Coolers and Filters for 40 Years"

Circle No. 30 on Reader Service Card for more information

Hugh T. Walters has been appointed general service manager heading all service activities for Tecumseh Products Co. This covers the Tecumseh, Mich., the Marion, Ohio, and the Emeryville, Calif. plants. His headquarters will be in Tecumseh.



Hugh T. Walters

Formerly service parts manager of Norge Div., Borg-Warner Corp., Walters has had more than 30 years experience in the service and manufacture of commercial and domestic refrigeration.

John M. Bickel and **Charles V. Fenn** have been elected vice presidents of Carrier Corp. Fenn will con-



J. M. Bickel



C. V. Fenn

tinue in charge of the Direct Sales Div., and Bickel of the Dealer Sales Div. Previously they were managers of these two divisions. Both will continue to headquarter in Syracuse. Each of the new vice presidents has been with Carrier for 23 years.

James A. White has been appointed vice president in charge of research refrigeration and product development for Refrigerated Parts Co., a subsidiary of Selmix Dispensers, Inc. White recently joined Selmix after selling the name and assets of Refrigerated Parts Co. to that organization. White is chairman of the National Code Regulations Committee of the Refrigeration Service Engineers Society.

P. B. Terhorst, formerly superintendent of York Corp.'s Grantley

manufacturing plant, has been appointed works manager. Terhorst's responsibilities will include production control, industrial engineering, maintenance, stores and inspection and quality control, in addition to his present manufacturing duties. Assisting Terhorst in new assignments will be P. E. Kyburg, Grantley production manager; D. G. Meckley, manager of inspection and quality control at Grantley; C. F. Stephenson, Grantley chief industrial engineer; and R. W. Noel, Grantley plant engineer.

R. B. Stotz has been appointed manager of the Airtemp Construction Corp., a subsidiary of Chrysler Corp. Stotz, former director of Airtemp Construction Corp. activities in New York, Boston and Philadelphia, replaces the deceased I. C. Baker as head of ACC. He joined the firm in 1945 as a field engineer.



R. B. Stotz

ROTARY SEAL Replacement Units

AT ALL LEADING JOBBERS

For Commercial, Semi-Commercial, Air Conditioning, and Household Refrigerator Compressors....over 20 years of performance proof..

.. Units available for all standard makes.

AVAILABLE FOR MORE THAN 900 COMPRESSOR MODELS

THE ROTARY SEAL COMPANY mechanical seals for rotating shafts

"Seal with Certainty!"

2020 NORTH LARRABEE STREET CHICAGO 14, ILLINOIS, U.S.A.

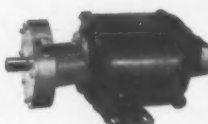
CANADIAN AGENT: 2025 ADDINGTON AVENUE MONTREAL 28, QUEBEC, CANADA

Easy to Install
Efficient in Operation
Simple in Construction
Economical

UNIT NO. 4215

Pumps and Condensate Disposal Units

A large selection of heavy duty pumps for continuous duty under severe operating conditions.



Eastern condensate units are available for normal or high temperature operation. Completely automatic and foolproof.

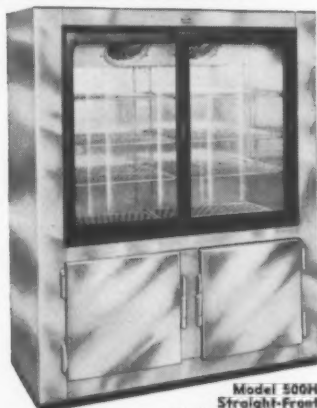


Send for full information . . .

Eastern INDUSTRIES, INC.

296 Elm St., New Haven, Conn.

it's a GEM!



Model 500H
Straight-Front
Display Refrigerator

Gem Refrigerator Company, custom maker for 30 years, now makes competitively priced commercial refrigerators with custom features.

protected territories open!

Don't miss out on the greatest sales opportunity to come your way. Get details.

GEM

REFRIGERATOR CO.

165 W. Wyoming Ave.
Philadelphia 40, Pa.

Circle No. 33 on Reader Service Card

Fiber Glass Insulates Packing Plant Pipes



SECTION OF BRINE LINES in a Pittsburgh packing plant insulated with Ultralite glass fiber insulation shows the final covering of tar coated roofing paper.

* * *

Use of glass fiber insulation on brine lines has proved to be an effective solution for the pipe covering problems of the Fried & Reineman Co. packing plant in Pittsburgh, Pa.

Francis Yost, the plant's chief engineer, decided to try this treatment when it became necessary to replace the existing insulation on the brine lines leading to the bacon cooler and cutting room.

These lines operate at 20 F for 24 hours a day, five days a week, and alternately on Saturday and Sunday. Because the lines were small, Yost decided to have the installation of the insulation done by the plant's own maintenance personnel.

The lines were first painted with tar lap cement. Then an application of 15-pound felt paper was made, followed by a 1-inch layer of Ultralite No. 75 glass fiber insulation. Then came a second layer of the felt paper followed by another 1-inch layer of the glass fiber insulation. The lines were finished in 45-pound roofing paper coated with tar.

Quantity of iron pipe covered was as follows: 75 feet of 1-inch pipe, including five valves and six fittings; 109 feet of 3/4-inch pipe, with four valves and eight fittings; and 68 feet of 1/2-inch pipe, including one valve and six fittings.

Total amount of material used was 400 sq. ft. of insulation, one roll of saturated felt, three rolls of roofing paper, 18 balls of twine, and 10 gallons of cement. Application of the insulation required about 75 hours of labor.

Subsequent checks of this installation on two different occasions have shown the lines to be free of frost and

operating at top efficiency. On a third check, in which the pipe covering was pierced in several places, the line was still found to be frost free. Two of the fittings did show some signs of frost, but Yost attributed this to negligence in the application of the insulation.

So satisfied was Yost with the results of this installation that he decided to use this same glass fiber insulation in other places in the plant.

The first of these additional installations was the insulation of two horizontal process melting vats operating at approximately 275 F. A 2-inch thick blanket of glass fiber insulation was applied to these vessels, covered by a 6-ounce canvas jacket stapled and cemented into place.

Asbestos cement was not used between the insulation and the jacket because these vats are constantly being repaired, and the insulation must be readily removable.

The other installation of glass fiber insulation was the application of a 2-inch thickness to the outside wall of the bacon cooler to minimize the amount of solar heat picked up during the hours that the sun shines on the outside of this wall.

CARRIER HEAD RETAINS CONFERENCE BOARD POST

Cloud Wampler, president of Carrier Corp., was re-elected a board member of the National Industrial Conference Board for a term of one year at the Board's 334th meeting held recently, in the Waldorf-Astoria Hotel, New York City. Wampler has been active in the work of the Board for a number of years, having been elected a board member in 1947.

PROFIT SHARING . . .

Continued from page 29

fectively maintained. They are more likely to sense participation in the success of their company when there are profits to be shared.

I am certain that in case of a depression or a financial reversal, management can easily explain why there is no profit distribution, and employees will likely understand.

3. The receipt of cash payments from the plan frequently gives the employee the ability to purchase something extra to enhance his standard of living or to provide some luxury which would not be possible out of his current income. The extra cash payment can also be used to make extra payments on investments such as home mortgages.

Cash profit shares thus become extra current income and something which can be spent, saved or invested as the employee sees fit, therefore, giving him the freedom of choice. The company, however, should educate their employees in thrift and self-reliance and the wise use of the profit sharing cash.

Fairness Must Prevail

The success or failure of this plan depends on the employees to set up the proper administration for this purpose as well as being fair in the distribution of the profits. Unless the spirit of fairness exists, it would be useless to set up any plan. A plan properly administered is a plan which can spell only success.

According to the Council of Profit Sharing, there are eight steps in the installation of a profit sharing system:

1. The desire of management to install a plan in order to enhance the team spirit in organization.

2. Thorough investigation of existing plans, their administration and performance, both by studying literature available and by interviewing profit sharing management of other firms.

3. Selection of a plan or a combination of plans suitable for the particular organization.

4. Presentation of the plan and the thinking behind it to:

- (a) board of directors
- (b) stockholders, if any
- (c) employees

5. Revision of the plan in the light of suggestions received by these groups and, where necessary, adjustments of the wage and salary structure.

6. Drawing up of formal agreements, usually with professional, legal and actuarial assistance.

7. Formal announcement of the plan to the employees.

8. Administration of the plan by continuously selling it to the employees, in particular through complete financial information.

These steps properly examined and

executed can definitely aid in your decision in the installation of a profit sharing plan, thus spelling a brighter and more profitable future.

DOW NAMES EMERSON TO HANDLE STYROFOAM

The Dow Chemical Co. has named The Emerson Co. of Houston a distributor for Styrofoam. The Emerson Co., headed by Dean Emerson, has had wide experience with Styrofoam, the expanded polystyrene insulation produced by Dow.

RESULTS IN 2 MINUTES!



CLEAN AND CORROSION-FREE

Needle valve after 2 years of service, protected with Thawzone. Thawzone helps prevent corrosive attack. It destroys water before it forms acids, and neutralizes acids already formed.

There are two ways to reach moisture in a refrigerating system. One is to wait for it to come to a drier. The other is to go out and get it. Thawzone goes to the moisture. This means immediate action on moisture elimination.

Furthermore, this means that ALL of the moisture is contacted. None of it is beyond the reach of Thawzone, for Thawzone mixes freely with the refrigerant. As soon as you add Thawzone and give the unit a minute or two of "on" cycle you have started drying action through the whole refrigerant charge. No freezups tomorrow, because Thawzone destroys moisture . . . it can't return.

Here are some of the reasons why Thawzone has become a standard method of handling moisture problems:

- A. No pressure drop possible.
- B. Reaches all parts of the unit.
- C. Actually destroys moisture . . . not a mere antifreeze.
- D. Not subject to oil clogging.

- E. Neutralizes acids, helps prevent corrosion.
 - F. A patented invention . . . cannot be copied.
 - G. Helps prevent copperplating.
 - H. Prevents moisture trouble in new units, too.
 - I. Costs less. Only about 8c per lb. of refrigerant treated.
 - J. One product for all "Freon" and methyl units.
 - K. Only 1/4 oz. per lb. of refrigerant required.
- Practically every wholesaler carries Thawzone.
Highside Chemicals Co., Clifton, N. J.

THAWZONE®

**The Only Product That
Destroys Water . . .
and Goes to ALL of it**

Circle No. 34 on Reader Service Card for more information

Circle No. 35 on Reader Service Card

FINE ICC REFRIGERANT CYLINDERS

LO-BOY TYPE

Safe! Broad base prevents tipping, provides extra valve protection. Light weight, easy to handle. Forged Brass valves, fuse metal safety. Sizes: 5E, 10L, 25L, 35L.



Your
Headquarters

for
Cylinders



HI-BOY TYPE

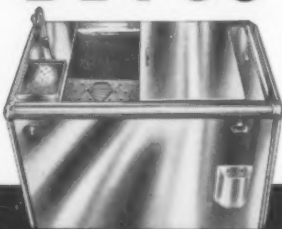
A standard type; seamless, rugged, serviceable. Forged Brass valves, fuse metal safety. Hammered glass finish. Caps included except 5-lb. size. Sizes: 5S, 10S, 25S, 35S.

Both equipped with spring loaded safety relief at extra cost. **HANDY-TOTE CAPS** are also available.

ASK YOUR WHOLESALE!
Write for new catalog No. 1152.

Fine PRODUCTS CO.
4837 SOUTH WESTERN BLVD.
CHICAGO 9, ILLINOIS

BEVCO



**QUALITY COOLERS YOU
CAN FIT INTO YOUR LINE
AND SELL AT A PROFIT**

ACCESSORIES



You sell quality, trouble-free cooling in these electric units that operate wet or dry. In 3 sizes... 4, 5, 6 ft. Unobstructed interiors. Baked Enamel finish for beauty and sanitation.

SEND FOR CATALOG C-1

The BEVCO Company, Inc.
3316-28 S. BROADWAY • ST. LOUIS 18, MO.

Circle No. 36 on Reader Service Card

50

USEFUL

BULLETINS • BOOKLETS • CATALOGS

The publications listed below are available to readers without charge. Simply circle on the postcard in this issue the key numbers of the items you wish to receive. Your requests will be forwarded directly to the companies concerned.

PICKING THE RIGHT THERMOMETER for the job is made an easy matter with the information available in a new 30-page catalog published by Marsh Instrument Co., an affiliate of the Jas. P. Marsh Corp. Featuring the greatly expanded Vapor Tension Dial thermometer line, catalog 76-T is designed with complete specifications, including descriptive matter, line drawings, templates and dimensional charts for each individual dial size and type.

Circle No. 111 on Reader Service Card

SEAMLESS AND STRIP WOUND flexible metal hose are the two basic types of hose described in a new 16-page catalog presented by American Brass Co. Catalog CC-400 shows the wide range of available alloys and sizes, suggested applications, and furnishes data on hose and fittings. Illustrations of each type hose showing construction features and applications are included.

Circle No. 112 on Reader Service Card

REFRIGERATION COMPRESSORS and condensing units of 75 to 100 hp capacity are covered in a new bulletin issued by Westinghouse Corp.'s Sturtevant Div. This illustrated bulletin contains lists of accessories for condensing units, specifications, technical data, and standard electrical characteristics. Well illustrated with line drawings showing overall dimensions.

Circle No. 113 on Reader Service Card

A NEW LINE OF DRIERS is featured in a 4-page bulletin issued by Henry Valve Co. Bulletin 700 contains cut-away illustrations of the driers and has tables of useful data on four types of driers; non-refillable, bulk refill, refill cartridge, and angle refill cartridge types. Tables and illustrations on drier refill cartridges and strainer screen cartridges are also included.

Circle No. 114 on Reader Service Card

IMPROVEMENTS IN SOLENOID VALVES are headlined in a new bulletin issued by Atkomatic Valve Co. Featuring adjustable timing on the closing stroke, which is available on all valves up to 300 pounds per square inch pressure, this bulletin also describes the explosion proof housings which are used on all sizes. Each type valve is illustrated and information including size, assembly particulars, operating pressures and applications for the various types is also included.

Circle No. 115 on Reader Service Card

AS AN AID to more profitable air filter sales, Himelblau Associates, Inc., have prepared a descriptive sheet covering the Filt-R-Ite type fiber glass air filters which are distributed by the firm. With an illustration of the product, this informative page also has an attached price list for standard and special filters.

Circle No. 116 on Reader Service Card

(More Useful Literature on page 53)

"Service Costs Much Lower... than any other refrigeration equipment we have yet handled"

—says Tibor Weiss, President, Interstate Equipment, Inc., St. Louis, Mo.

**Outstanding performance — plus lower service costs
— convince large Mississippi Valley distributor that
Kelvinator condensing units are tops in the field.**



INTERSTATE EQUIPMENT, INC.

DISTRIBUTORS OF

Commercial Refrigeration and Air Conditioning Equipment

1208-10 N. 7TH STREET

PHONE CHESTNUT 2816

ST. LOUIS 6, MO.

Nash-Kelvinator Corporation
14250 Plymouth Road
Detroit 32, Michigan

April 14, 1952

Gentlemen:

One year ago we started handling Kelvinator commercial products which we have been purchasing from the Saint Louis Branch. We feel that one year is long enough to 'tell the story'. After carefully analyzing the results we have had with your products, I am very pleased to state, they not only measure up to expectations, but exceed them by far.

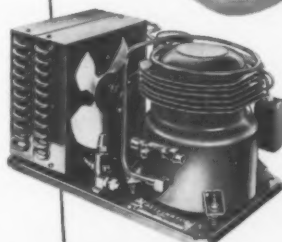
We are very well pleased with the performance of your equipment, and we are especially pleased with the fact that our service cost on Kelvinator equipment, percentage-wise, is much lower than that of any other equipment we have yet handled. We have been handling nationally known products.

I would like to go on record saying that we are very happy with our decision of a year ago, to handle Kelvinator products, and that we are looking forward to a long, profitable and mutually beneficial relationship.

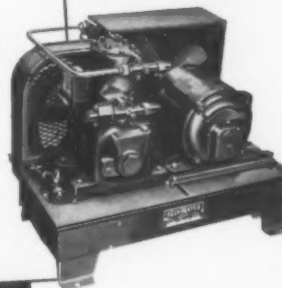
Sincerely yours,
INTERSTATE EQUIPMENT, INC.

Tibor Weiss

Tibor Weiss, President



See the selection of 16 Kelvinator Hermetic models, up to and including 1/2 H. P. (including new FREON-22 models). Five year warranty (optional).



See the complete range of Kelvinator open-type condensing units—ranging from 1/4 H. P. up to and including 5 H. P.

Profit Today... Build for Tomorrow with

Kelvinator

The Name that Sells... The Name that Satisfies!



Kelvinator
Beverage Coolers



Kelvinator Frozen
Food Merchandisers



Kelvinator
Water Coolers



Kelvinator
Ice Cream Cabinets



Kelvinator
Dehumidifiers

Circle No. 37 on Reader Service Card for more information
and AIR CONDITIONING • DECEMBER, 1952

**help yourself
to more sales,
more profits**

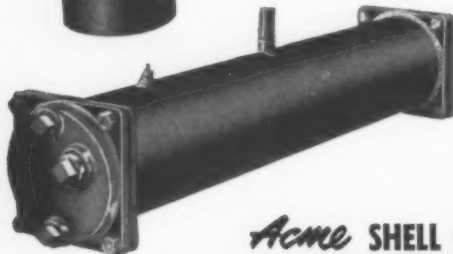
Increase your share of the air conditioning, temperature and humidity control market by selling Acme "Tailored to Fit" equipment. Versatile, sturdy, economical, easy to install Acme products help you help yourself. No matter the application, Acme has a standard unit to fill the need. Sell Acme and you solve most of your installation problems. Acme quality equipment is recommended and stocked by your jobber.

with *Acme* products



Acme FREON OIL SEPARATORS

There are 6 models of Acme Freon Oil Separators to meet all installation requirements from 1/4 h.p. to 10 h.p. Maximum separation is assured through low gas velocity and special filter cartridges. Seamless steel tubing and baffles that are steel welded to the cover plate assure a doubly long life for these units. The best is cheapest in the final analysis.



Acme SHELL and TUBE CONDENSERS

The J line of Acme condensers have capacities ranging from 1/2 to 25 tons, and are compact in size to make them ideal for moderately priced installations. Extensively used by original equipment manufacturers the J line has these advantages: extended tube surface, easily cleanable, cast iron water heads "through bolted" to the tube sheet, and sheets welded to the condenser shell.



Acme SUCTION LINE HEAT EXCHANGERS

Available in 3 to 200 ton capacities, the Acme HX Heat Exchangers are easy to install and increase overall system efficiency. The new design features the extended bar type fin surface, making possible a gas to liquid side area ratio of 13 to 1. An extremely low pressure drop provides maximum gains for any desired super heating effect and lessens the danger of liquid slop-over to the compressor and of flash gas at the control valve.



Acme SHELL and COIL CONDENSERS

For inexpensive, efficient condensers, Acme shell and coil units are recommended. Compact, sturdily constructed, they are chemically cleanable by circulating fluid through the water passages. All models furnished with integral fin copper tubing. These units are ideal for either initial or replacement use and range in capacity from 1/2 to 5 tons.



ACME INDUSTRIES, INC. JACKSON, MICHIGAN, U.S.A.
Flow Cold Division

CONTINUOUSLY SERVING THE AIR CONDITIONING AND REFRIGERATION INDUSTRIES SINCE 1919

Circle No. 38 on Reader Service Card for more information

DECEMBER, 1952 • COMMERCIAL REFRIGERATION

USEFUL LITERATURE . . .

Continued from page 50

DETAILED INFORMATION on Uni-Built centrifugal pumps and Remite seals is available in a new bulletin (No. ET-452) prepared by Bell & Gossett Co. This new mechanical seal is claimed to virtually eliminate leakage occurring when conventional packing glands are used. It is made of a composition of materials and is wear-proof, corrosion resistant, and self-lubricating.

Circle No. 117 on Reader Service Card

ACTIVATED CARBON AIR RECOVERY is described in a new 16-page bulletin (117-C) presented by W. B. Connor Engineering Corp. Featuring the Dorex line of air recovery cells this booklet contains photographs and drawings showing equipment and various methods of installation. A graph giving capacity and resistance curves is included.

Circle No. 118 on Reader Service Card

COLD WEATHER IS HERE and with it arises interest again in gas fired unit heaters. The expanded line Series 23 heaters is featured in a new four-page technical bulletin issued by the United States Air Conditioning Corp. This new line, described in bulletin 23-2, includes a number of sizes with capacities from 55,000 to 400,000 Btu per hour and burning all types of gas at the rated capacities. A complete and newly designed line of blower heaters, approved for use with ductwork, is also featured, along with capacity tables and roughing in dimensions for all models.

Circle No. 119 on Reader Service Card

A REAL CORKER of a bulletin has been issued by Dodge Cork Co. describing industrial cork products. This bulletin has just about everything you could look for in the way of information on natural cork products and cork compositions. All this information is in just four pages and illustrations showing varied applications are included.

Circle No. 120 on Reader Service Card

A COMPLETE GUIDE to successful silver brazing has been prepared by American Platinum Works. This 48-page bulletin provides correct answers to all general questions on low temperature silver brazing, alloys, joint design, applications and procedures. 50 drawings and charts are used to illustrate the text. Featured is a graph which enables you to calculate quickly the thermal expansion of metals at the various brazing temperatures.

Circle No. 121 on Reader Service Card

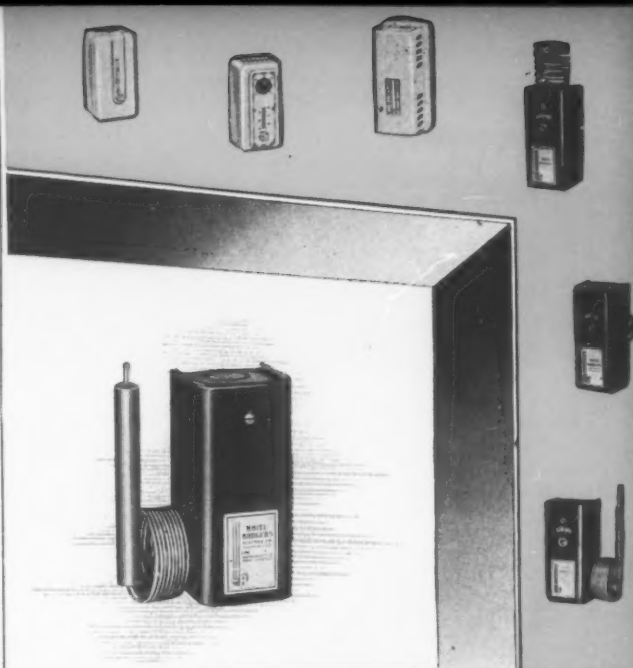
GENERAL PURPOSE CENTRIFUGAL PUMPS of the cradle-mounted type are described in a bulletin released by Ingersoll-Rand Co. This bulletin (form 7223) covers five basic cradle groups and 17 corresponding pump types, their capacities, horsepower ratings and uses. Two pages on pump dimensions and a table of performance under 60-cycle use are also included. In addition, two pages describing special purpose units and design modifications can be found.

Circle No. 122 on Reader Service Card

MULTI-PURPOSE screw-type thermocouple heads are covered in bulletin 5601 issued by Brown Instruments Div., Minneapolis-Honeywell Regulator Co. The thermocouple head can be used for single or duplex thermocouple terminal blocks and is protected against freeze-up and rust. Dimensional details and terminals blocks available are listed in the bulletin.

Circle No. 123 on Reader Service Card

Circle No. 39 on Reader Service Card



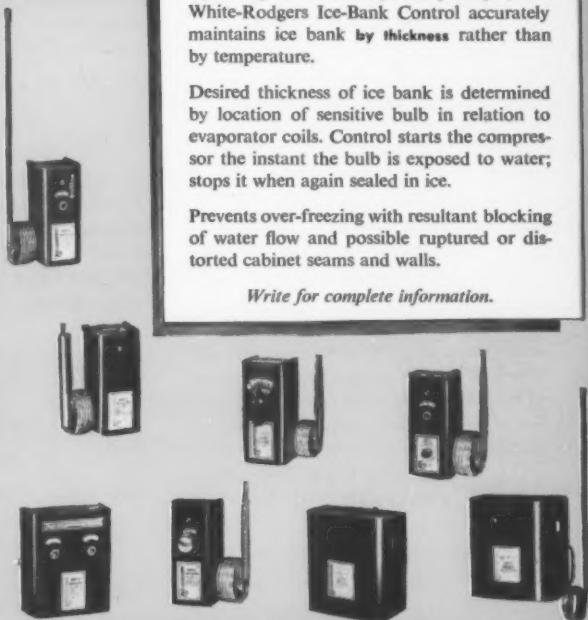
White-Rodgers . . . Assures POSITIVE ICE-BANK CONTROL

Operating on an entirely new principle, this White-Rodgers Ice-Bank Control accurately maintains ice bank by thickness rather than by temperature.

Desired thickness of ice bank is determined by location of sensitive bulb in relation to evaporator coils. Control starts the compressor the instant the bulb is exposed to water; stops it when again sealed in ice.

Prevents over-freezing with resultant blocking of water flow and possible ruptured or distorted cabinet seams and walls.

Write for complete information.



WHITE-RODGERS



Controls

FOR REFRIGERATION
HEATING AND
AIR CONDITIONING

ST. LOUIS 6, MO.

Branches: New York, N.Y.—Long Island City 1,
35-14 Crescent St.

Chicago 11, Ill.—548 N. Lakeshore Dr.

Cleveland 3, Ohio—5005 Euclid Ave.

Detroit 21, Mich.—16590 Wyoming Ave.

Resident Sales Engineers
in all Principal Cities

NEW

PRODUCTS

For further information on any of these products, simply circle on the postcard provided in this issue the key numbers of the items in which you are interested. Your requests will be forwarded directly to the companies concerned.

Flexible Charging Hose

Product: New "Rediflex" Type D flexible charging hose.

Manufacturer: Fine Products Co., Chicago.



Features: New 36" hose is said to be most flexible charging hose available. Can be rolled on fingers, hid in palm, carried in hip pocket, manufacturer claims. Hose comes equipped with rapid coupler and 45-degree E-Z-Flow elbow to make connections quickly. Hose cover is close-woven, luster-coated, extremely flexible. Has non-kinking tight weave, 1000 psi test. Inner core made of heavy gas-tight neoprene. E-Z-Flow elbow, of forged brass, connects anywhere, permits gas to flow without turbulence or restriction, permits no gas leakage. Has non-wobbling coupler guide; seat holds flexible gasket in place. Gasket seals both joints. Knurled nuts provide quick, easy coupling, tighten with finger tips. Now available through refrigeration wholesalers.

Circle No. 131 on Reader Service Card

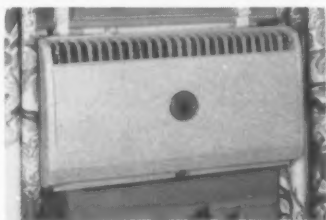
Window Air Conditioner

Product: New ¾ ton "Floating-Air" window air conditioner.

Manufacturer: Friedrich Refrigerators, Inc., San Antonio.

Features: Powered by Friedrich patented "FloatingAir" system of refrigeration as used in company's commercial refrigerators, unit is said

to offer heavy-duty cooling efficiency. Fully adjustable AirFlow control pro-



vides 24 vertical louvers and 3 horizontal louvers which make possible selective distribution of refrigerated air to suit individual preference and for more efficient air direction in various shaped rooms. Sealed condensing unit carries 5-year warranty. List price \$299.50.

Circle No. 132 on Reader Service Card

Refrigerated Display Unit

Product: New Lern refrigerated display case for desserts, pastries, gelatins, custards, puddings, fruits, salads and dairy products.

Manufacturer: Lern, Inc., Chicago.

Features: Designed for restaurants and other food service places, to



conform to health standards for refrigerated storage and display of perishable dessert items. Self-contained AC unit, requires no installation. Model L3SC is 36" long, 18" deep, 20 7/8" high, has 1 1/2" fiber glass insulation throughout, full vision sliding glass doors, 3 adjustable glass shelves. Holds 38 to 40 F tem-

perature. Compressor hermetically sealed, weight complete unit 120 lbs. Model L3SC3 is 36" long, 21" deep, 20 7/8" high, same as above, with larger storage capacity. Can be had with or without fluorescent lighting, stainless steel reflector. Also available for remote installation of condensing unit or multiple installation.

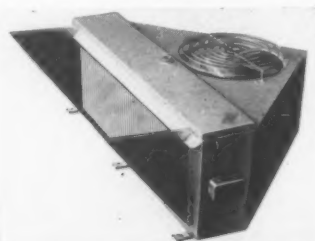
Circle No. 133 on Reader Service Card

Electric Defrost Coil

Product: New electric defrost coil ("Defrostair") employing patented low wattage heat trap system for low temperature operation.

Manufacturer: A. H. Witt Co., Los Angeles.

Features: "Defrostair" unit is available in 11 models from 3800 to 26,250 Btu/hr at 10 FT.D. Heat trap system takes advantage of trapping warm air under canopy or hood, reverse of principle widely used in open type dispensing fixtures. Heat is applied by low wattage heaters and warm air is trapped inside coil.



During defrost cycle compressor and fan motors are shut down and heaters operate. Done by means of time clock. Heat rises and is captured by heat trap allowing warm air to remain within surrounding area of tubes, fins and return bends. Warm air is not dissipated into refrigerated area. System is simple and practical, uses no solenoids, switching valves, check valves or re-evaporators. Said to be considerably lower in cost than other systems for similar application.

Circle No. 134 on Reader Service Card

Condensate Pumps

Product: New line of Apco-Matic condensate return units.

Manufacturer: Aurora Pump Co., Aurora, Ill.

Features: Units are available in capacity range suitable for handling condensate for heating systems with

ratings from 800 to 10,000 EDR and pressures up to 50 psi. Combine lat-



est features in vertical turbine-pump design with minimum space requirements. Close-coupled pump is mounted on resilient synthetic rubber; pumping unit is of bronze to avoid corrosion. Receiver is rectangular. Low return opening is convenient for connection to return lines close to floor, yet insures ample suction head for efficient operation. Mechanical seal eliminates leakage, keeps floor dry and clean. Replacement of worn parts possible without disturbing piping connections.

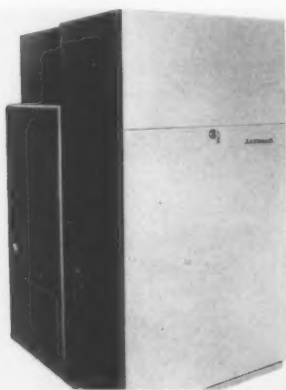
Circle No. 135 on Reader Service Card

All-Year Air Conditioners

Product: New residential air conditioning unit for year-around use.

Manufacturer: Typhoon Air Conditioning Co., Brooklyn, N. Y.

Features: New Typhoon S-W unit can be changed back and forth from cooling to heating by merely flicking



a single switch. Unit does not require dampers, damper controls or damper motors. Unit can be used in new home or as replacement for present warm air furnaces. Overall dimen-

sions are 50" x 37" x 70" which will allow installation in any convenient space in house. Cooling section alone can be supplied for connection with existing furnaces. Present models are in 3 and 5 tons cooling capacities, with minimum heating output of 80,000 Btu and maximum of 112,000 Btu hr. Present models use gas (any type), oil model is being planned. Smaller 2 ton model also will be available soon. Furnace is AGA approved, has special burner safety control; cooling side has all standard Typhoon

design features, including all-copper condenser, oversized compressor, seamless copper coils.

Circle No. 136 on Reader Service Card

Shell and Coil Condensers

Product: New "Cross-flow" line of shell and coil condensers designed especially for cabinet air conditioners and other installations where space is limited.

Manufacturer: Standard Refrigeration Co., Chicago.

Grand Rapids Brass

announces

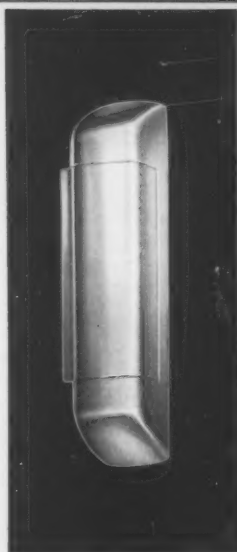
NEW edgemount

LOCKS, STRIKES AND HINGES



The NEW Edgemount concealed strike is flush-mounted on the surface of the cabinet . . . no mortising is required . . . no cutting away of metal. The Edgemount is designed for all commercial refrigerators. Hinge has Oilite bushings for permanent lubrication, long wear. The Edgemount lock features the "When it trips—it grips" action.

Write for complete details.

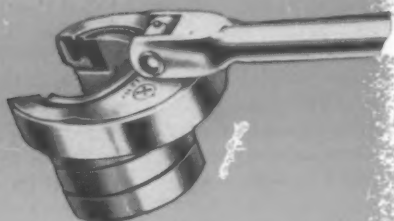


Grand Rapids Brass Company

GRAND RAPIDS, MICHIGAN

Circle No. 41 on Reader Service Card for more information

this wrench



can slash your costs 3 ways

TAC Open End Ratchet Wrench

delivers incredible savings wherever "tight" situations prevail involving tubing, pipe, conduit, cable or long studs. Saves at least three ways:

1. **CUTS TIME** on production or maintenance operations because it slips around tubing and down fittings, where you ratchet off or on in mere seconds. Functions perfectly with as little as 7° arc clearance for handle. Reduces workman injury too—TAC can't slip off the work and skin up knuckles.
2. **CUTS COST** on fittings, tubing, etc. Snugs down on fittings, never "barks" or scars the hex fitting.
3. **REDUCES INVENTORY OF HAND TOOLS** required in your tool crib. Several sockets, a few head sizes, and you eliminate over half the wrenches you'd otherwise maintain.

"BORROW" ONE— PROVE FOR YOURSELF!

Rated companies may request on Letterhead a sample handle, head and socket, for full trial. We ship on memo billing—returnable for full credit. ACT NOW—"BORROW" THIS MIRACLE WRENCH and prove its value!

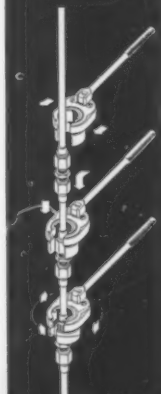
Send for free catalog



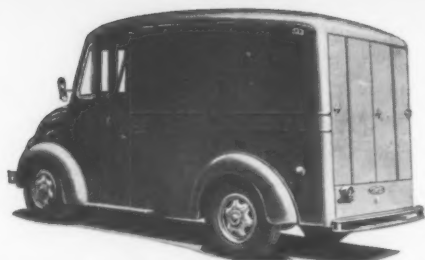
TUBING APPLIANCE COMPANY
10321 Anza Avenue, Los Angeles, California

Circle No. 42 on Reader Service Card

HERE'S HOW
IT WORKS!

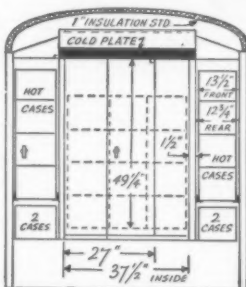


DIVCO COLD CABINETS



Above: Cold-cabinet rear doors open for access to cold load.

Left: Front end showing loading arrangement and DOLE Holdover Truck Plate mounted at top of cabinet.



... are Equipped with Hangers Suitable for DOLE PLATES

DIVCO Corporation furnishes as original equipment or for customer installation insulated cold-cabinet inserts which can be set into DIVCO Models 31, 33 and 34 Milk Bodies to provide refrigerated transportation. A DOLE Holdover Truck Plate can be customer-installed to maintain the load at constant temperature enroute. Capacity of the cabinet is 68 square bottle quart cases with storage space for 52 empty cases.

For safe, loss-free delivery of milk or other perishable food products, DOLE Vacuum Plates are the ideal refrigeration.

Ask for Catalog D-12.



DOLE REFRIGERATING CO.

5910 N. PULASKI RD., CHICAGO 30, ILL.
103 Park Avenue, New York 17

In Canada: Dole Refrigerating Products Limited,
44 Elgin Street, Brantford, Canada

Features: Condensers are compact and small, vertical 3-ton model being only 8 $\frac{5}{8}$ " OD x 16" high. Units are featured by exceptionally



low water pressure drop and can be used either with city water or with cooling towers. Currently available in capacities ranging from 1 $\frac{1}{2}$ tons through 5 tons and tested to 300 lbs. pressure. May be had with ASME stamp and certificate if desired. Company also manufactures shell and coil, shell and tube and cleanable counterflow condensers.

Circle No. 137 on Reader Service Card

Access Tee

Product: Fool-proof access tee for tapping into a hermetic refrigeration unit.

Manufacturer: Superior Valve & Fittings Co., Pittsburgh.



Features: Access tee is ideal for hermetic units where charging port is stuck or in location where port is difficult to reach. Can be used for charging, purging, attaching a gauge, etc., and is designed for use with all standard hermetic valve kits. It is a leak-tight unit that can be used repeatedly. Hardened steel stem incor-

porates broached hex for insertion of standard hermetic valve kit adapter. Body is of forged brass, knurled brass cap is fitted with resilient gasket and acts as secondary seal. Available in either 1/4" or 3/8" SAE flare or 1/4" or 3/8" solder connections. Stocked by leading wholesalers.

Circle No. 138 on Reader Service Card

Room Air Conditioners

Product: Eight new models of room air conditioners ranging from 1/3 to 1 $\frac{1}{2}$ hp.



Manufacturer: Carrier Corp., Syracuse, N. Y.

Features: Models are versatile in performance, installation, number of sizes available, and appearance. Air at low velocity passes over cooling

Now, say

FLEXON

when you specify
Vibra-Sorbers
for compressor
lines



... your best assurance
of long, dependable service

With the change of our corporate name from Chicago Metal Hose Corporation to FLEXONICS Corporation, Rex Super-Service Vibra-Sorbers are now known as FLEXON Super-Service Vibra-Sorbers. Only the trade name is changed, however—Vibra-Sorbers still provide the effective, dependable vibration control that has made them the preferred connector for refrigeration and air conditioning compressor lines.

Standard bronze units are available in sizes from 3/16" through 4". Steel or stainless steel units are also available. Write for data sheets and prices.



Flexon identifies CMH products that have served industry for over 50 years.

CHICAGO METAL HOSE Division

Flexonics Corporation

1321 S. Third Avenue • Maywood, Illinois
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

Circle No. 44 on Reader Service Card for more information

coil twice for extra dehumidification. Larger models feature "quick cooling" to reduce temperature quickly in hot rooms and Humitrol for super cooling or to remove extra humidity if needed. Models can be adapted to fit any type of window, or can be installed through wall, hung from ceiling, located in a transom, etc. Installation can be so that most of unit is outside window, eliminating jutting of cabinet into room. All vents except at front and rear are eliminated; maximum projection of grille front from window glass is 8½" to 9½"

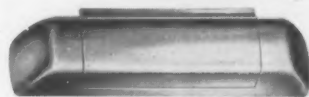
so drapes can be pulled in front of unit when desired. Standard window models in 1/3, ½ and ¾ hp, deluxe models in ¾ and 1 hp. Console models in 1 and 1½ hp sizes, plus a 1 hp console with water cooled condensing.

Circle No. 139 on Reader Service Card

New Hardware Line

Product: New line of flush-mounted locks, strikes and hinges for all commercial refrigerators.

Manufacturer: Grand Rapids Brass Co., Grand Rapids, Mich.



Features: New line, named the "Edgemount," eliminates need for mortising or cutting away cabinet metal or wood. Line has a low silhouette and surface mounting is completely hidden by lock. Lock also mounts on either side of door eliminating need for right or left-hand model. Can be mounted with handle up or down. Strike adjustment is 7/16" to 5/8". Oilite bronze bushings provide two-way protection against tension and thrust never need oiling. Undershot jaw on strike was invented and patented by Grand Rapids Brass, is called "lock with living action".

Circle No. 140 on Reader Service Card

Continuous Freezers

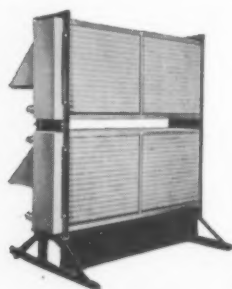
Product: Floor-type continuous ice cream freezers with mix input control.

Manufacturer: Sweden Freezer Mfg. Co., Seattle.

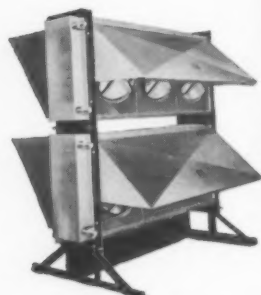
Features: Mix input control allows operator to automatically add any desired amount of mix to freez-



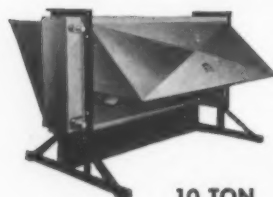
ing cylinder. Setting rotary switch above freezer head starts flow of mix from stainless steel mix tank located over each cylinder. Switch shuts off flow when desired amount of mix has been admitted to cylinder. Model 1-130A20, with two 2½ gal. heads, has capacity of 20 gal. of soft serve product per hour; Model 1-131A20 has two 1 gal. heads and capacity of 15 gal. per hour. Both are identical in operation and each has two 4 gal. mix tanks. "Dial mix" feature is said



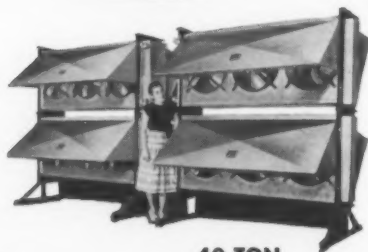
20 TON



20 TON



10 TON



40 TON

SPECIAL APPLICATIONS — Write to us about your condensing problem.

WRITE FOR BULLETIN U-177-S

KRAMER TRENTON CO. • Trenton 5, N.J.

Circle No. 45 on Reader Service Card for more information



Jobbers—

“SELL THE LINE THAT
GIVES YOU THE MOST —”

Tecumseh

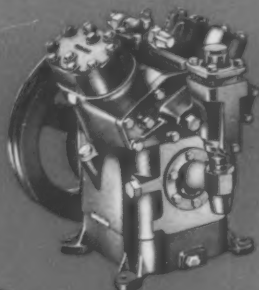
The complete line of hermetic and open type compressors!

For a really complete line of replacement compressors, both hermetic and conventional, see the new Tecumseh jobber line. Here is a replacement compressor for any application including hermetics from $\frac{1}{8}$ to 2 H.P. in the full range of back pressures and open type from $\frac{1}{8}$ to 15 H.P.

Specifically designed for the jobber trade, these compressors contain all the latest improvements in refrigeration compressor design. Of particular interest are the hermetics for most domestic and commercial applications and the new “V” type compressors covering the 1 to 3 H.P. range. The 2 and 3 H.P., VFP compressor, incorporates the last word in conventional compressor design and contains many new improvements including: pressurized lubrication, high speed operation, compactness of design and maximum capacity.

But see for yourself the compressor line that really gives you a perfectly designed model for any application. See the Tecumseh line today!

Model VFP, 2-3
H.P. conventional
compressor.



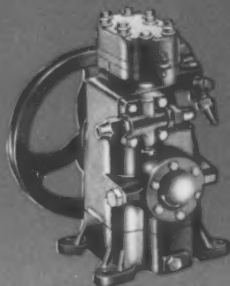
Models C2513 and
C2616, $\frac{1}{2}$ H.P.
hermetic compres-
sors.



Model 528 and 564,
 $\frac{3}{4}$ or $\frac{1}{2}$ H.P. herme-
tic compressor.



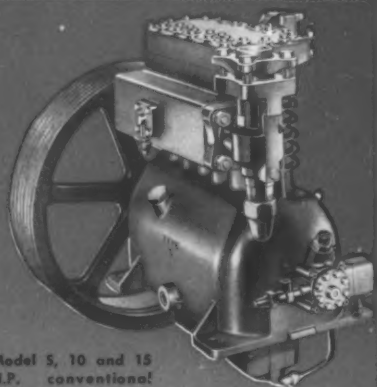
Model VFP, $\frac{1}{2}$ H.P.
conventional com-
pressor.



Models 1400,
1000 and 2300,
 $\frac{1}{8}$, $\frac{1}{4}$ and $\frac{1}{2}$ H.P.
conventional compres-
sors.



Model 5, 10 and 15
H.P. conventional
compressor.



For full information write:



TECUMSEH PRODUCTS
TECUMSEH, MICH. *Company*

EXPORT DEPT.: 2111 WOODWARD AVE., DETROIT, MICH.

★ The world's largest
producer of condens-
ing units for the re-
frigeration industry. ★

to assure operator of adequate and ready supply of soft serve product at all times, and to give positive control over volume of input from mix tanks. Mix addition may be made at any time.

Circle No. 141 on Reader Service Card

Room Air Conditioners

Product: Two new room air conditioners that adjust themselves automatically to room temperature changes.

Manufacturer: General Electric

Co., Specialty Products Dept., Louisville, Ky.

Features: As units are turned on refrigerating mechanism is controlled by a thermostat adjustable to any one of six settings by means of plastic dial on front base of cabinet. Control turns cooling mechanism off when room temperature drops to selected level, turns it on again when temperature rises 3° above that level. Ventilating fan circulates room air when refrigerating mechanism is off. Three circular louvered vents located behind removable grille at front of

cabinet can be rotated independently to channel air flow in any direction. Dial on top left side of cabinet turns on refrigerating unit or ventilating fan only. Dial at top right controls outside air intake, allowing year-around use of unit. Designed for window installation, units can be adapted for through-wall or cabinet-type installation. FA-55B (½ hp) serves rooms up to 300 sq. ft.; FA-75A (¾ hp) serves rooms up to 500 sq. ft.

Circle No. 142 on Reader Service Card

Self-Defrosting

FROZEN FOOD DISPLAY CASE



KOCH HAS SOMETHING NEW!

We're mighty proud.
And with good reason.

We've produced a chip right
off the old Koch block! A cabinet

that features the latest improvements . . . yet

matches and lines up with other Koch standard self-service equipment.

SO BIG . . . a typical loading is 1400 average packages per 10-ft. unit.

SO HANDSOME . . . it's an eye-catching, crowd-drawing,
register-ringing beauty—with mirrored canopy or without.

SUCH SALES WINNING WAYS . . . because merchandise-moving
design puts a full 23 sq. ft. of sales space at the product line, with

EVERY SQUARE INCH visible and accessible.

SO EASY TO CARE FOR . . . because simple, quick,
efficient electrical defrosting takes care of itself!

KOCH

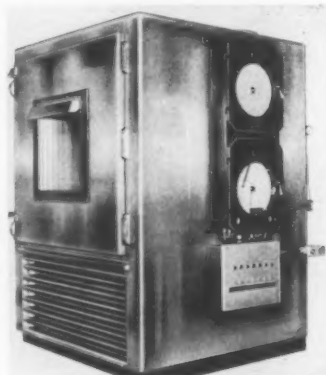
refrigerators, inc.
NORTH KANSAS CITY 16, MO.

Circle No. 47 on Reader Service Card for more information

Test Chambers

Product: A standard line of environmental test chambers for conducting all types of temperature humidity tests.

Manufacturer: Tenney Engineering, Inc., Newark, N. J.



Features: Standardizing on five basic chamber types is designed to fit most requirements and eliminate need for custom-built models. Chambers automatically maintain humidity from 20% to 95% through a temperature range of 35 to 185 F. Minimum dewpoint is 33 F. Chambers in TH series come with following inside dimensions: (1) 22" x 19" x 48"; (2) 42" x 18" x 48"; (3) 36" x 31" x 36"; (4) 42" x 24" x 48"; (5) 48" x 24" x 48". Models 1 and 3 have one door, others have two. All models have calibrated indicating thermostatic controllers, air circulating blowers for uniform air movement, stainless steel interior and exterior paneling. Four types of controls are incorporated: constant humidity, constant temperature; constant humidity, varying temperature; varying humidity, varying temperature. Chambers meet over 20 schedules to which government agencies

and manufacturers of government equipment must conform.

Circle No. 143 on Reader Service Card

Cold Room Paints

Product: New "Damp-Proof" enamel for use in refrigerated rooms.

Manufacturer: Koch Supplies, Kansas City, Mo.

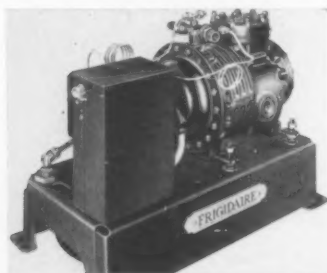


Features: Can be applied to damp surfaces. Permits moisture to escape through painted surface, and afterwards forms a seal against further penetration of moisture. Paint dries in short time, does not leave odor on stored products, manufacturer says. Applied by brushing, and can be done without removing stored products from cooler. Other cold-room paints developed by Koch Supplies include "Ice-Proof Enamel", which can be used in temperatures as low as -50 F, and "Rust-No-More" metal finish for preventing or checking rust, available in four colors.

Circle No. 144 on Reader Service Card

Sealed Compressors

Product: New line of sealed reciprocating compressors.

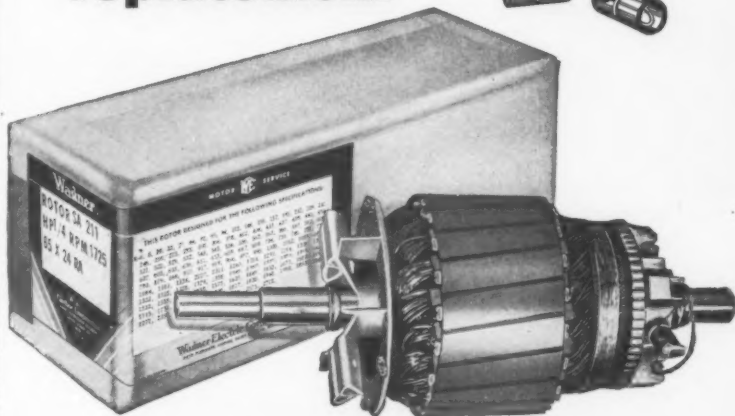


Manufacturer: Frigidaire Div., General Motors Corp., Dayton.

Features: Called XD (Extra Duty) Meter-Misers, new line ranges from 1/3 through 7 1/2 hp in size. Available in four types—air-cooled,

Genuine Joe says:

take the
"headaches"
out of
rotor
replacement



Stock Wagner Standard Rotors

A stock of Wagner Standard Rotors simplifies armature replacement. There's no guesswork involved—Wagner K and M "spec" lists, when used with the "tell all" label on the Wagner Rotor Package, assure the *right* choice every time. Even if the motor you're repairing has a special shaft, you can easily remove the shaft from the standard armature and replace it with the special one.

Replacing burned-out rotors the Wagner way is a simple job—and it's good business, too! You move small motors out fast, and you keep your winders free for more profitable jobs. Get *your* copy of Wagner's K and M lists. Write today.



WAGNER ELECTRIC CORPORATION
6442 Plymouth Ave., St. Louis 14, Mo., U. S. A.

MOTORS • BEARINGS • STANDARD ROTORS
BRUSHES • CAPACITORS • COMMUTATORS

**650 AUTHORIZED SERVICE STATIONS
OR PARTS DISTRIBUTORS**

Circle No. 48 on Reader Service Card for more information

water-cooled, combination air- and water-cooled, and models for use with evaporative condensers. All models carry five-year warranty. Motor-compressor unit is sealed against dirt and moisture. Units have direct-drive operation between motor and compressor, housed in same casting. Built-in "load selector" is adjustable to meet load requirements of individual applications. Lubrication is by plunger-type lubricating pump driven from eccentric on end of drive shaft. Motor windings cooled by refrigerant gas entering

compressor body to maintain proper motor temperatures. Compressor bodies installed on spring mountings to cut noise and vibration. Air-cooled models range from 1/3 to 3 hp; water-cooled models from 1/3 to 7½ hp; combination models from ½ to 3 hp; evaporative models from 1½ to 7½ hp.

Circle No. 145 on Reader Service Card

Bacteria-Control Unit

Product: New model Glycolator for furnace applications.



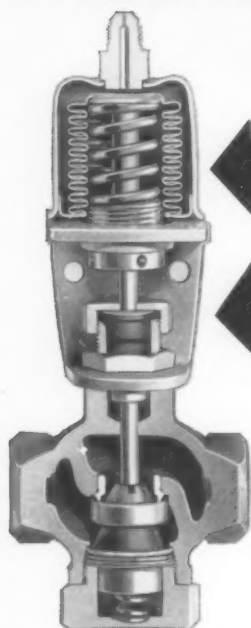
Manufacturer: Glycolator Div., Iron City Chemical Co., Valencia, Pa.

Features: Appliance volatilizes Glycosol and introduces it into air stream in warm air furnaces or stacks for control of air-borne bacteria and viruses, reducing incidence of colds and other respiratory diseases. New model is mounted easily and treats up to 20,000 cu. ft. of air per hour. Temperature control keeps the volatilization at correct rate and reduces current consumption.

Circle No. 146 on Reader Service Card

TWO BIG REASONS

for insisting on
Marsh-Electrimatic Regulators



TWO-PLY BELLOWS

NEOPRENE BOOT

Two-ply bellows has more than twice the life of single-ply

Break-down tests prove that the Marsh-Electrimatic two-ply bellows has 2½ times the life of an equivalent one-ply bellows. This is because a single ply bellows must be made of heavier gauge metal . . . and naturally the heavier metal rapidly breaks down under the fatigue of flexing.

Boot eliminates packing — friction

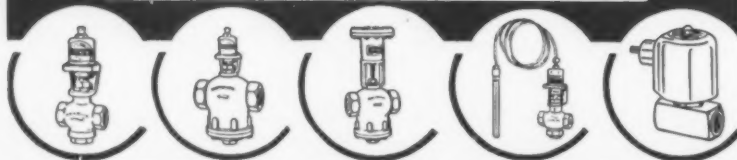
At one time the best way to eliminate packing was with a metal bellows, but this Neoprene boot has all the advantages of a bellows plus ten times its life. We have repeatedly proved this, too . . . by cycling the boot, without failure, under actual operating conditions *ten*

times as long as we could cycle the best metal bellows.

These are just two of the many features that make the Marsh-Electrimatic last longer and function better. They are typical of plus values found in the entire Marsh-Electrimatic line. Write us or see your wholesaler.

THE ELECTRIMATIC CO. Sales affiliate of Jas. P. Marsh Corporation, Dept. P, Skokie, Ill.

MARSH-Electrimatic



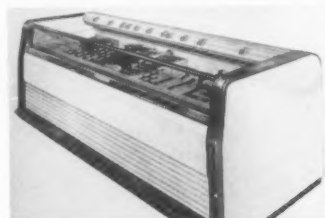
Circle No. 49 on Reader Service Card for more information

Frozen Food Case

Product: New 8-foot frozen food display case.

Manufacturer: Hussmann Refrigeration, Inc., St. Louis.

Features: Model L-8 has Hussmann forced air circulating system,



same as in the previously introduced L-11 unit. Model L-8 is designed for merchandising all kinds of frozen foods. The 8-ft. length permits smaller store to follow trend of times and reap additional profits from frozen foods. Design of case is similar to Model OS cases for self-service meats which also employ forced air circulating system. Model L cases can be joined together with OS cases for continuous display and are available without superstructure or with 56" or 70" superstructure.

Circle No. 147 on Reader Service Card

FROST HEAVAGE . . .

Continued from page 32

provide rapid freezing through the combination of -30 F temperature and high velocity air circulation.

Storage areas are refrigerated by ceiling-level finned coils through which brine, cooled by an ammonia refrigerating system, is piped. Temperatures in each room can be individually controlled to suit the requirements of the product stored.

Working aisles also are refrigerated to immediately protect food brought into the warehouse and keep warm air from entering the freezer rooms. Vestibule doors keep warm air out of the working aisles.

Refrigerated portions of the warehouse are completely encased in 6 to 8 inches of insulation. Exterior is of 8-inch rough glazed tile. Interior finish is cement plaster over metal lath. Roof construction is reinforced pre-cast concrete tile.

Lightweight vermiculite concrete was used to provide cant strips and drainage slopes for the giant 4-acre roof, as well as provide additional insulation. Much heavier supporting steel construction would have been required if ordinary sand concrete had been used.

Vermiculite concrete was used as a sub-slab for the floor of the office section for added warmth. It also was used as a roof insulation over the 40 x 120-foot, two-story tenant section, the boiler room, and office sections.

White marble chips were placed over the built-up roofing, instead of conventional gravel, to reflect the sun's rays and minimize penetration of solar heat.

JATO CONDITIONING . . .

Continued from page 31

air supply discharged to the outside.

When moisture is removed from air by chemical dehydration, the total heat remains practically the same and, since latent heat is removed, the sensible heat is increased. This heat is picked up by a direct expansion coil which is built into the Kathabar. The compressor used is a 10-hp GE unit.

The recirculated air is exhausted from the rooms through a water washer to remove dust particles. Fresh air from outside mixes with the washed air and the mixed air passed through a

Freon-12 direct expansion precooling coil and leaves at approximately 43 F. A 60-hp GE compressor handles this system.

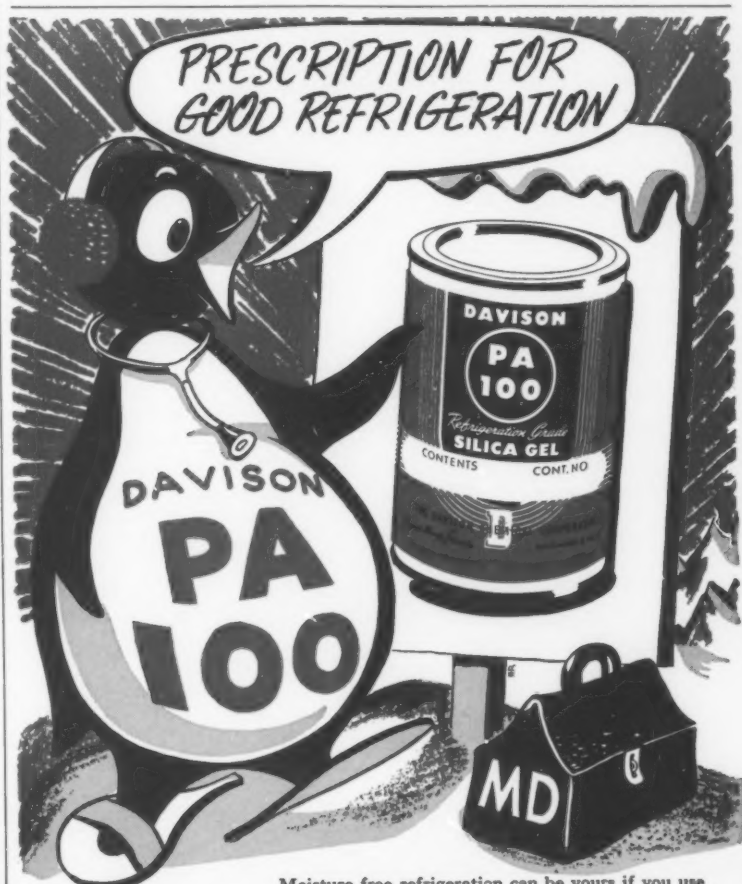
A blower discharges part of the pre-cooled air through the Kathabar and part through a fixed bypass. The dew point of the resulting mixed air is low enough to maintain the humidity below 20% r. h.

The dry air then passes through a six-zone thermostatically controlled mixing damper set-up, with a hot water coil in the hot deck. Part of the air is reheated and automatically

mixed with bypassed air in the correct proportions to maintain 70 F in each zone.

The hot water for the Kathabar and the reheat coil is supplied by a Coates electric boiler.

All of the Freon-12 systems use evaporative condensers, as there are no cooling towers used. The laboratory system uses a Drayer-Hanson condenser, while the others use Recold condensers. Minneapolis-Honeywell controls are used throughout the systems. All fans and blowers are products of American Blower Co.



Moisture free refrigeration can be yours if you use PA-100. Tests prove PA-100 can dry refrigerants to moisture levels that cannot be reached by other refrigerant drying agents. And PA-100 cannot cause corrosion . . . actually helps prevent it by removing corrosive compounds from the system.

There need be no worry about caking, dusting, deliquescing or channeling refrigerants with PA-100.

Prescribe PA-100 for your moisture problems. Available from your jobber in cartridge or bulk can.

Progress through Chemistry

THE DAVISON CHEMICAL CORPORATION

Baltimore 3, Maryland

PRODUCERS OF: CATALYSTS, INORGANIC ACIDS, SUPERPHOSPHATES, PHOSPHATE ROCK, SILICA GELS, SILICOFLOURIDES AND FERTILIZERS

Circle No. 50 on Reader Service Card for more information

COMMERCIAL *Refrigerator* SALES NEWS

Advertising Can Help Distributors By Handling First Three Sales Steps

A condensation of an address presented by R. E. Stephenson, advertising manager of Hussman Refrigeration, Inc., at the sixth annual convention of the National Commercial Refrigerator Sales Association.

MECHEANIZED selling, in the form of effective advertising, can help a commercial refrigeration distributor make most profitable and productive use of his sales facilities by accomplishing for him the preliminary steps to any sale.

We are all familiar with the five steps that go into the making of a sale. The first step is to *contact the prospect*, the second is to *arouse interest*, the third is to *create a preference*, the fourth is to *present a proposal*, and the final one is to *close the order*.

These five steps are time consuming and they cost money. If you are going to make the most profitable and productive use of your selling ability you can't afford to devote your valuable time to preliminary steps in the sale-making process which can be performed by better methods.

That's where mechanized selling comes into the picture. Mechanized selling simply implies the employment of the most efficient and economical tools in the manufacture of an order. Advertising is one of those tools which definitely can help the distributor get the greatest number of sales at the lowest possible cost.

Advertising performs this function by taking care of the first three steps in making the sale. This leaves the salesman, the skilled worker, free to concentrate his efforts on steps four and five—presenting the proposal and closing the order.

The manufacturer whom you represent is spending many thousands of dollars on various advertising media. If you really want to cash in on this vast expenditure and realize how profitable advertising can be for you, try developing an advertising program in your own trading area which backs up and supplements the national advertising of the manufacturer. In this way advertising can be made an active partner in the sales team.

There are many different types of advertising. It is important that you select the medium or mediums which will be most effective for you and that you then specifically tailor your program to accomplish the aims you wish to achieve.

Consistency and continuity in your advertising is important, too. Advertising is a definite part of selling. It is not something that can be used one month and then sidetracked for the next several months.

The success of the individual distributor goes far in building the success of the industry. In any territory where you have aggressive competitive distributors operating, interest is stimulated in store modernization. As more and more stores are improved, those which are lagging behind increasingly realize that they are faced with the alternative of joining the parade of modernization or falling by the wayside.

For this reason it is vital for all of us to keep aggressive in order to insure greater possibilities for a stable and continuing flow of business. One of the best ways I know of for a distributor to be aggressive is to back up his sales efforts with mechanized selling.

Food retailing is today one of America's largest single industries. It also is one of the most rapidly changing industries. From yesterday's small corner grocery to today's bustling super market is a long step taken in a comparatively short time. All of us in the refrigeration industry can be justly proud of the part refrigeration has played in bringing about this tremendous change in food merchandising.

As this tremendous market has developed, we have had to develop our sales organizations accordingly. No longer can we be satisfied with just mechanical refrigeration salesmen. To sell this new market a salesman now must help the food merchant more. He must give merchandising assistance and he must be able to render numerous other services of this type.

The good distributor not only offers

Record Milk Cooler Sale In New Hampshire



LARGEST SINGLE INSTALLATION of wet-storage type electric milk coolers ever made in the state of New Hampshire was made recently by the H. E. Humphreys Co., Inc., Concord, in several New Hampshire state institutions. Shown here, loaded and ready for delivery, are the six 12-can Esco Niagara milk coolers which comprised the installation. They will cool the 2800 quarts of milk which are produced daily at the state institution farms.

these services, but through them wins respect from his customers. Today's selling calls for more responsibilities, but as a reward we have greater opportunities for building profits.

The most outstanding problem you distributors have today is getting enough money for your product to make a profit. One of your biggest headaches is the price cutter who doesn't realize that this method of merchandising is used only by the man who doesn't recognize the value of the services he should offer a customer.

Through consistent advertising you can sell your prospects on the value of your services to such an extent that you can ask prices for your products which will not only pay you a profit but will also cover the cost of those three initial sales steps which your advertising takes for you.



5 NEW REPRESENTATIVES ANNOUNCED BY SUB-ZERO

The appointment of five new representatives is announced by Sub-Zero Products Co., Cincinnati, manufacturers of low temperature industrial chilling machines.

The Tucker Wilson Co. of Roseville, Mich. will represent Sub-Zero in Michigan. The South Carolina territory will be covered by Tidewater Supply Co. of Columbia. The Wisconsin area will be served by Mid-Continent Products Co., of Chicago. The O'Toole Dodridge Co. of Gardena, Calif. will be representative in California.

E&L Metcalf Company, 338-340 Beaufort St., Perth, Western Australia will handle all Australian orders.

SCHAEFER NAMES NEW CHICAGO DISTRIBUTOR

Schaefer, Inc., ice cream cabinet manufacturer, has announced the appointment of the Robert P. Christiansen Co., 3917 Irving Park Road, as distributor for Chicago and surrounding counties in Illinois and Indiana.

Present at the franchise signing in the factory-showroom were Arnold Christiansen; Robert P. Christiansen; Elton F. Hess, Schaefer sales manager; Eugene O'Brien, Christiansen executive; and Bart Rose, Schaefer's Chicago district representative.

The Christiansen Co. will maintain showrooms and warehouse with the full line of 17 Schaefer models available at all times. Service and replacement items also will be available.

COFFMAN TO WICHITA

Wilson R. Coffman has been made industrial manager of the Wichita branch office of Minneapolis-Honeywell Regulator Co. Most recently he has been on the Kansas City field staff of the company's Brown Instruments Division.

Here's a Sales Maker

**for You...
for Your
Customers-**

The New

VIKING CASE

for Dairy Products or Fresh Meats

This new case has all the features your customers want in an open-type, self-service case. Famous Norsair* cooling assures proper temperatures and humidity . . . is easily regulated for refrigeration of dairy products or meats . . . at minimum operating cost. The compact, spacious case comes in two or three deck models and in six and ten foot lengths. Extensible. Sparkling porcelain interior and exterior, gleaming mirrors, fluorescent lighting, double glass front and ends provide eye-appealing display.

To sell more, sell Viking. Inquire today about a Viking franchise.

*Pat. No. 2,466,286

Mail Coupon TODAY

VIKING REFRIGERATORS, INC.

7508 Wilson Avenue
Kansas City 3, Missouri

☐ Send me more information about Viking's new No. 1006-D & M and No. 1010-D & M Case.

☐ Tell me about the availability of a Viking franchise in my area.

Name _____

Firm _____

Address _____

City _____ State _____

VIKING REFRIGERATORS, INC.

7508 Wilson Ave., Kansas City, Mo.

Circle No. 51 on Reader Service Card for more information

CONTRACTORS

NEWS • ACTIVITIES • PLANS

RACCA Petitions Architects For Separate Cooling Category

THE reasons why the Refrigeration and Air Conditioning Contractors Association believes that refrigeration and air conditioning equipment should be handled as a completely separate category in the drawing up of architect's plans and the invitation for bids has been presented to the American Institute of Architects by RACCA's executive office.

According to Nathan Edelstein, executive secretary of RACCA, the information submitted by the contractor association will be published in the official A.I.A. publication, and will also be presented to the A.I.A. board of directors for consideration and study.

Full text of the article outlining RACCA's viewpoint follows:

Refrigeration and air conditioning should be treated and handled as a completely separate category in the drawing up of architect's plans and the invitation for bids. Refrigeration and air conditioning is extremely important today in construction and so is important to the architect. Many times such refrigeration and air conditioning has gone away from plan to execution. Reasons for this condition are stated herein.

It is the opinion of Refrigeration and Air Conditioning Contractors that to achieve the results for which the architect is seeking, separate plans must be drawn.

It is, therefore, imperative for architects to give this problem much more study than they have heretofore, because many of the best pieces of architecture have failed in that they have satisfied the esthetic but not the practical or the utilitarian. It is pretty to look at but not livable.

Refrigeration and air conditioning, a lusty youngster, is here to stay. Its uses are being multiplied rapidly. It behooves the architect to learn everything about refrigeration and air conditioning. It is the prime responsibility of the architect to know everything about it. It is his duty to instruct the contractor on how such work should be done.

In order to thus explain refrigeration and air conditioning construction thoroughly, separate plans must be drawn. Then contractors will not be enabled to make excuses that plans are not clear, that they are irrevocably intermingled with work other than their own, that they are not architects and cannot understand complicated plans. If separate plans are drawn the architect can hold the refrigeration and air conditioning contractor directly responsible.

Refrigeration and air conditioning has come a long way from its very humble beginnings. Not so long ago, maybe 30 years or so, refrigeration consisted of circulating brine out of a central ammonia plant. Small refrigeration units were unknown and the chief work in refrigeration was the installation of iron pipe to carry the brine. Refrigeration consisted of a pump and motive power which confined itself to a machinery room in which it was installed, many times by manufacturers direct, and

pipings installed and maintained by piping contractors. It was natural, therefore, that this brand new industry would be adopted by a craft closely allied to pipe fitting.

Small domestic units were first placed on the market in the 1920's with the introduction of refrigerants other than ammonia. Small refrigeration units could now be used. In the main they used sulphur dioxide. In 1926 refrigeration, still very much in its infancy, had already counted 340,000 units in use; this included both commercial and household.

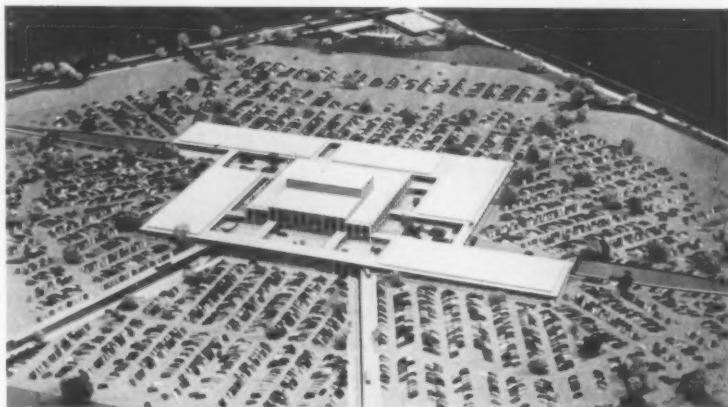
Today, there are more than 40 million such installations, far removed from not only ammonia but sulphur dioxide and methyl chloride. Today with the use of the new Freon refrigerants, refrigeration and air conditioning is a new craft entirely separate and as far as the poles, with reference to its being conducted by heating and ventilating contractors or pipe fitter contractors.

In 1926, the average saturation of refrigeration equipment, both domestic and commercial, was 1.78%. The South at that time was the highest with 2.41%, the West was the least with 1.15%. The East rated 2% and the North 1.70%. Today the saturation is closer to an average of 40% nationwide and expanding by leaps and bounds month by month.

The Refrigeration and Air Conditioning business progressed because it concentrated on the problem of making a safe, efficient, inexpensive commodity. As such, it developed specialized engineering, specialized merchandising and specialized contracting.

The Refrigeration Contractor is many things—he must know mechanical engineering, chemical engineering, electrical engineering, the physical engineering of gases and the physics of heat and its associated fields.

"Biggest Centrifugals" To Cool Detroit Store



HERE IS A MODEL of the world's largest regional shopping center, now being built in the Detroit area by the J. L. Hudson Co., which will be completely air conditioned with Carrier equipment. The installation, which will amount to more than \$1,400,000, will include the biggest cooling machines ever designed for air conditioning a business building—two giant centrifugal machines with 3,600 tons of cooling capacity. The machines—11 feet high by 14 feet wide by 20 feet long—will handle air conditioning needs for all of the buildings currently under construction in the 161 acre Northland Center project. Chilled water from the centrifugals will be circulated through underground mains to each of the buildings in the project and will be supplied to tenants for air conditioning use on a metered basis.

Only long experience by methodical study will enable a person to properly engineer and service refrigeration and air conditioning equipment.

A plumber, an electrician, a heating contractor, tinsmithing contractor, although well learned and experienced in their own fields, could not possibly approach the complexity and the knowledge and understanding necessary to engineer a refrigeration job.

Coordination Is Important

Because of the practice of years standing that air conditioning and refrigeration be given to plumbers or heating and ventilating contractors, there has been no separate plans drawn for refrigeration and air conditioning.

A refrigeration and air conditioning contractor would be more than competent, in fact, more suitable than any of the above named. Many times when refrigeration and air conditioning sub-contractors working under such plumber or pipefitter have discovered problems and difficulties which have arisen, they have been unable to consult with the architect. In the busy excitement of completing a job, this inability to get together with the architect generally resulted in a refrigeration or air conditioning job being completed improperly or costing more to construct or taking longer to do the job.

Single Contract System

There are instances that although a particular refrigeration and air conditioning contractor, technically able and financially responsible actually submitted the low bid for the installation of such equipment, lost the bid due to the fact that the plumber acting as superior contractor included a percentage for himself which thereupon placed that bid out of the running.

The American Institute of Architects very well comprehends the advantages and disadvantages of a single or several contract system. The quotation under Chapter 26, page 50 of the Handbook of Architectural Practice puts the argument (The Single Contract System) extremely well. The advantages of letting the work under a single contract seems to be obvious. All responsibility is concentrated upon a single contractor; all communication is to be held, at least in theory, with him and if he does not execute all the work through his own staff, he has sub-contractors whom he must manage, whose operations he must harmonize, and whose every act or failure he is to be answerable.

Multiple Contract Systems

Some of the reasons why such an ideal is not generally achieved have been stated in Chapter 24, ("The Systems of Several Contracts").

"If it often works badly to entrust everything to one contractor, perhaps something may be gained by a partial return to the old system of separate contracts, letting the more difficult and critical branches, such as plumbing, heating and ventilation, electrical work and elevators to contractors whose own forces actually execute the work. He (the owner) can give careful attention to the letting of each contract, and, for work of a good quality, he will gener-

ally receive closer bids than would be sent to general contractors.

"This practice has become well established and many states now require that, for public work, bids on plumbing, heating, ventilation, electrical work, power plants, etc., shall be received separately and contracts awarded to the lowest responsible bidder for each branch. In private practice, if the Owner has received separate bids upon such branches of the work, he generally lets separate contracts for them; but some times, if he has confidence in the General Contractor, he places the successful bidders of the several branches, with their consent, as Sub-Contractors under the General Contractor."

RACCA says that included in these

branches of "plumbing, heating, ventilating, etc.," should be included Refrigeration and Air Conditioning as a separate category for the reasons stated in the Handbook.

(Balance of this RACCA statement will be published in next month's issue.)

FARR CO. NAMES POWELL

Farr Co. of Los Angeles, manufacturers of air filters and air filtration equipment, has announced the appointment of John S. Powell as division sales manager supervising the Central Div.

Your No.1 DEMAND...

the CONDENSER must be

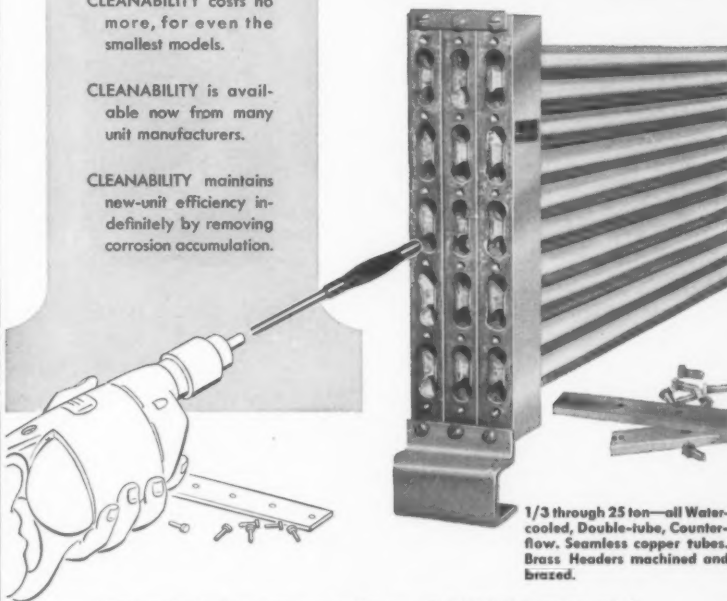
CLEANABLE

Because...

CLEANABILITY costs no more, for even the smallest models.

CLEANABILITY is available now from many unit manufacturers.

CLEANABILITY maintains new-unit efficiency indefinitely by removing corrosion accumulation.



Why not insist that your next unit have a CLEANABLE water-cooled condenser? Especially since leading manufacturers, one after the other, are recognizing the "must" advantages of accessibility to cleaning and are equipping their units accordingly. Initial purchase cost is no higher, and longer life and more economical performance are guaranteed. The CLEANABLE feature enables you to recover new-unit efficiency and thus maintain 100% economical operation indefinitely. Water-tubes are accessible from both ends on all size models.

Wholesalers in Principal Cities
Write for descriptive literature.

HM
Halstead & Mitchell

OFFICES: Bessemer Building, Pittsburgh 22, Pa.

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NEW INSULATION METHOD USED IN STORAGE JOB

When the Patterson Frozen Foods Co. of Patterson, California, wanted a low cost, low temperature frozen food storage building recently, contractors used a new structural combination of plywood and Ultralite glass fiber insulation.

Results: A cold storage plant guaranteed for 15 years (1) to keep foods safely at temperatures not to exceed -40 F., (2) constructed quickly, and (3) constructed at substantial savings.

Western Fibreglas Supply Co., San Francisco contractors who handled the job, reports that the key to the successful technique is the use of Ultralite glass fiber insulation in varying thicknesses to a total of 10" in depth.

On a floor that was a combination of concrete, clay tile and cork, the contractors raised walls 16' high, 35' wide by 64' long. The roof was wood fiber 12" thick and was furnished by the owner.

A cross section of the unique wall construction showed the following

(from inside out): 1. waterproof plywood liner $\frac{1}{2}$ " thick and painted; 2. a vapor barrier; 3. ten inches of Ultralite "75"; 4. plus 2 in. of Fibreglas AE board in hot asphalt; 5. another vapor barrier; 6. Douglas Fir T & G sheathing painted.

The Ultralite was installed between two courses of studding, both spaced on 26" centers. The inside studs were 2 by 6's and between the first row of studding.

After that, the AE board was put on, followed with the vapor barrier. This in turn was covered with the sheathing material.

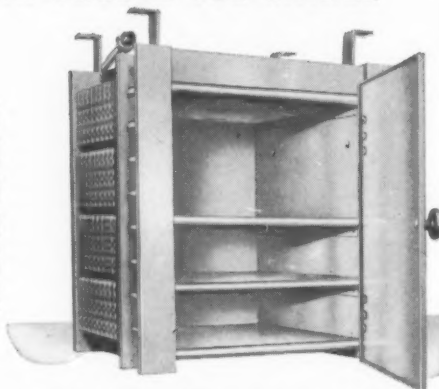
The building is said to compare favorably to similar cold storage buildings regardless of their construction. The Patterson Frozen Foods storage room was built to last 15 years, the "average life" of 90% of all cold storage rooms.

"some combinations can't be beat!"



Tenney KWIK-FREEZE ICE MAKER

Tenney Kwik-Freeze Ice Makers produce ice in 120 minutes, or less, and are designed for replacement of ice trays with pans for food storage at will. Quality construction with entire body rigidly fabricated from polished aluminum, with enclosed back plate. Finned booster coils and wrapped shelf tubing is electro-tin-plated for protection of food, and prevention of electrolytic action of copper and aluminum. Frozen food compartment with door can be supplied.



It takes a combination—a well integrated Tenney team of top engineering and practical application of the lessons of experience—to produce the most efficient and durable refrigeration equipment. This Tenney KWIK-FREEZE Ice Maker, for example, embodies years of design research and manufacturing experience in the refrigeration field. This experience, combined with top flight engineering methods, is your guarantee of complete satisfaction.

That's why, for either standard or special installations, it pays to "take it to Tenney."

**SERVICEMEN
CONTRACTORS,
JOBBER,
ENGINEERS**

Tenney brings you the advantages of advanced engineering and manufacturing facilities to handle any and every refrigeration problem, for the Tenney line is built to suit your needs. Outline your problem, and let us prove that a Tenney unit will solve it.



Tenney
Engineering, Incorporated
Dept. F 26 Avenue B, Newark 5, New Jersey

Engineers and Manufacturers of Refrigeration and Automatic Environmental Test Equipment
Circle No. 53 on Reader Service Card for more information

CHARLESTON HOTEL ADDS YEAR-ROUND SYSTEM

York Corp. has received a contract to furnish equipment for a complete year-round air conditioning system for the Francis Marion Hotel, Charleston, S. C. Utilizing York's new unitary air conditioning system, the 12-story hotel will be both heated and cooled by the same system.

No ductwork is required with this particular type system. Chilled or hot water is provided for cooling or heating required. This system is said to permit unusual flexibility for the architect and engineer, and to require a relatively small amount of space. Furthermore, little of the hotel's normal traffic need be disturbed while the installation is being made.

In addition to the unitary air conditioning system, the Francis Marion has purchased a number of hermetically sealed York self-contained air conditioners. These units will cool the lobby, dining rooms, ballrooms, and other public areas.

The hotel's new air conditioning system was designed by the consulting engineering firm of Newcomb & Boyd Co., Atlanta, and the overall air conditioning contract is being handled by Reliance Engineering Co., Charlotte, N. C.

**BUY FROM YOUR
REFRIGERATION WHOLESALE**

ED TANNER DIES; ACTIVE IN COAST CONTRACTORS

Ed Tanner, president of the Tanner Refrigeration Works, San Francisco refrigeration contracting firm, died Oct. 18 at the age of 52 years.

In addition to heading a successful refrigeration and air conditioning contractor organization, Tanner was a co-founder of the Refrigeration Contractors Association of Northern California. He had served the Association as president, and was a director of the group at the time of his death.

According to a message from E. D. Flynn, executive vice president of the Association, death resulted from a heart attack which occurred while Tanner was aboard his cabin cruiser on a brief respite from his workaday activities.



GLASS FIBERS JOINS MINERAL FIBER ASSN.

Glass Fibers Inc., Toledo, has joined the Industrial Mineral Fiber Institute, it was announced jointly by officials of the company and by Frank Christenson, president of the Institute.

R. W. Capaul, vice president and general sales manager, and F. J. Solon, Jr., vice president—advertising and public relations, represent Glass Fibers Inc. at association conferences.

Glass Fibers Inc., with plants at Waterville and Defiance, Ohio, and at Santa Clara and Burbank, Calif., manufactures lightweight insulating wool, glass textile yarn, pipe wrap, vibration and shock mount material.

TYLER, KELLY NAMED TO NEW G-E POSTS

The appointments of Richard D. Tyler as manager of marketing and Thomas J. Kelly as manager of engineering for the General Electric Co.'s Appliance Control Dept. at Morrison, Ill., have been announced by John C. Helies, general manager of the department.

Tyler will have over-all responsibility for the sale and promotion of controls related to major appliances, air conditioning equipment, domestic heating systems, and special devices.

Kelly will be in charge of development and design of the department's products.

GETS SALES POST

James E. Vanderveld has been appointed industrial sales manager of the Portland, Me., office of Minneapolis-Honeywell Regulator Co. Vanderveld was transferred from the Boston branch field staff of the company's Brown Instruments Div.

New Filters reduce wear, clogging, shutdowns!

Keep oil and refrigerant free of sludge, flux, chips, rust, carbon and other impurities with the *New*

PERMACLEAN FILTERS

Exclusive PERMACLEAN Filtering Element

Provides large, effective surface, plus depth filtration. Graded density is progressively increased in the direction of flow, with final filtering to ten microns and smaller.

The new DFN "Permaclean" Filters are ideal for running-in new installations or for corrective service on established units. They are now available at your wholesaler in factory-sealed and cartridge types for every need.

Ask for Bulletin 9FS at your wholesaler or by writing to us direct.

NEW "Y" STRAINER



Built to DFN standards of quality and effectiveness.

McINTIRE CONNECTOR CO., 257 Jefferson St., Newark 5, N. J.



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THE HEATING SIDE . . .

Continued from page 37

capacity of 8,000 Btuh., or a combined capacity of 16,000 Btuh. Table 2-C on Page 4 of the work sheet indicates that an 8-inch feeder will be required to handle this load at a distance of over 15 feet. Hence feeder duct "A" is specified at 8 inches in diameter.

The two lavatories have a combined capacity of 12,000 Btuh., but because of the distance from the

plenum Table 2-C indicates they also require an 8-inch feeder, indicated on the plan as feeder "B".

The storage room, while having the same heat loss as the two lavatories (12,000 Btuh.), is closer to the plenum, and for this reason the two registers are served by feeder "C" which is 7 inches in diameter. Because the utility room in the center is fully enclosed, it requires no heating.

The seven registers specified for the 2-bay work area, each handle between 7,000 and 8,000 Btuh. These

are served by a 14-inch trunk line "D" which supplies feeders "E", "F", "G" and "H", all of which are 8 inches in diameter.

The sizes of these feeders are determined from the register capacities in Table 2-B on Page 4 of the work sheet. Trunk size is determined by the table showing "Diameters of Round Trunks" found on Page 8 of the same work sheet.

Because of the fact that the perimeter duct is always the same size as the largest feeder duct, we know that in this case our perimeter duct will be 8 inches in diameter.

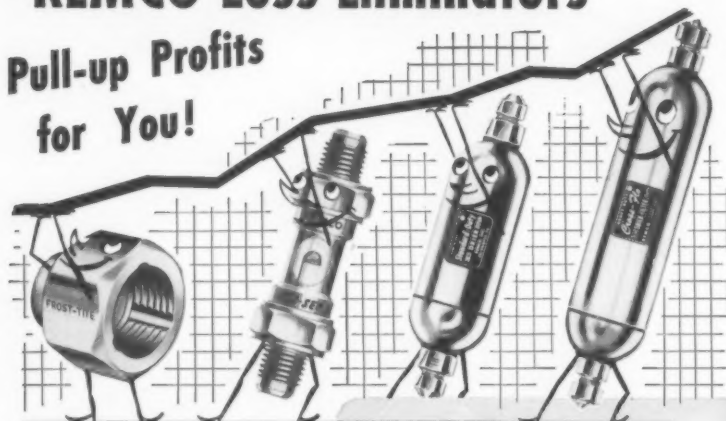
Register sizes are selected in "free area required in square inches" from the tables found on Page 6 of work sheet 4-B. As the free areas of registers become smaller the further they are located from the plenum it is imperative that tables of this kind be used for register selection.

Tables of register sizes for perimeter heating are also available from the various register manufacturers. Under no circumstances should register sizes designed for other types of heating and air conditioning be used.

In an installation of this type, return air is no problem as it is permitted to enter the utility room at one or more points in the walls of this room. In residential installations return ducts may be installed overhead from each area, or the attic space used as a return air plenum, fed by ceiling or upper wall registers.

REMCO Loss Eliminators

Pull-up Profits
for You!



FROST-TITE

Frost-relieved Flare Nuts, guaranteed not to creep, loosen or crack. A must for lowside applications. Should be used everywhere in the system.

E-2-SEE

100% foolproof Liquid Indicators. Guaranteed to eliminate losses from leaking. With new "FLO INDICATOR" flap to indicate all variations of flow.

STANDARD-DUTY DRYERS

The lowest-cost, most efficient molded driers on the market. Ideal for use by original equipment manufacturers and for field installation or service replacement. Available with either Molded REMCAL or granular Silica Gel. Cap. $\frac{1}{4}$ to $1\frac{1}{2}$ HP.

SEND FOR DESCRIPTIVE LITERATURE



Carried in Stock by Leading Wholesalers

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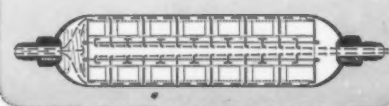
NEW

Cross-Flo

POSITIVELY THE MOST

EFFICIENT DRIER-FILTER MADE!

New Cross-Flo is now greatly improved — with new REMCAL super-strength drying element, and new FIBERGLAS Depth Filter. New Cross-Flo guarantees increased flow area, increased moisture-absorbing capacity, increased filtering capacity, all-around improved efficiency that positively does away with pressure drop, premature clogging, and plugging. See it now at your wholesalers.



YEAR-END INVENTORY . . .

Continued from page 35

opening inventory of \$15,000 and he purchases \$50,000 worth of goods during the year, he will then have a combined total, at cost, of \$65,000. If the selling price is \$100,000, the margin is 35% of the selling price.

To determine the cost value of year-end inventory, the dealer must compute at the selling price and then convert this to cost price by a percentage formula. If the year-end inventory is valued at \$20,000, the cost would be 35% less, or \$7,000 from \$20,000, or a cost value of \$13,000. This year-end inventory then becomes the starting inventory for the following year.

Certain goods may not be salable at normal prices because of damage, shop wear, imperfections or other

causes. This might apply to sleepers acquired during the last war or during the postwar shortage period. Such goods may have failed to move at considerable markdown. Year-end inventory taking provides the occasion to get relief.

Such goods can be valued at their bonafide selling price, less the actual cost of selling. It is immaterial whether cost, or cost or market, method is used. However, there must be a bonafide revaluation.

It cannot be resorted to only to reduce inventory values if the facts do not warrant. In this respect the dealer must actually offer such goods for sale within 30 days after the in-

exercise more care than ever before in the taking of inventory.

It can no longer be done in a slapdash manner on the erroneous assumption that a few oversights are immaterial. The attention a dealer gives to this year-end task, and the method he elects, will have a major bearing on his net earnings as well as upon the size of his income tax assessment.

**BUY FROM YOUR
REFRIGERATION WHOLESALE**

LOW-TEMP CONFERENCE

The Eighth Conference on Low Temperature Physics and Chemistry, sponsored jointly by the Office of Naval Research and the National Science Foundation was held at the G-E Research Laboratory, The Knolls, Schenectady, N. Y., Oct. 6 and 7. Study of metals and other substances at temperatures down to -460 F is expected to result in technical applications improving sensitivity of electronic receiver circuits, control mechanisms and communications systems.



ventory and at the selling price which was used to determine the cost value of such goods.

Thus, if certain goods have been carried in past inventories at \$500 (the original cost), such goods, in fact, may have a real valuation of only \$300. If it is calculated that the cost of selling these goods is \$50, then the cost value for inventory purposes would be \$250.

This will reduce the year-end inventory by \$250 (\$500 minus \$250). It will increase the cost of the goods sold during the year by the same figure. Net profit, in turn, will be reduced by \$250. However, having obtained this relief on obsolete goods, the following year's starting inventory will be \$250 lower.

The taking of a year-end inventory is traditional in business. However, the injection of heavy income taxation makes it imperative that dealers

Service-Master

is the ideal air conditioning service body"

says **MR. ALEXANDER ORR, JR.**
CONDITIONED AIR CORP., MIAMI, FLA.



"Service-Master has practically eliminated return trips to our shop. With a cargo area for bulky items, and well organized compartments for tools and parts, we can now carry a complete shop to every job. In a year's time, we've saved an average of more than one-half hour per day. In dollars, that amounts to almost enough to buy another Service-Master Body."

If your present truck equipment isn't adequate for your work, why not get the full story on the efficient Service-Master Body? Just clip the coupon below . . . paste it on a post card . . . and mail it. You're under no obligation, of course.



**McCABE-POWERS
AUTO BODY COMPANY**
5900 N. BROADWAY • ST. LOUIS 15, MO.

Please send me literature and complete information about Service-Master

Name

Company

Address

City Zone State

BCD

Circle No. 56 on Reader Service Card for more information



ADD \$ TO YOUR BUSINESS

**with
TEXACO
CAPELLA
OIL
(WAXFREE)**

You can add profitable dollar signs to your business with *Texaco Capella Oil (Waxfree)* because this is the compressor oil that *won't "wax out"* in systems even down to minus 100° F. That means cleaner, more efficient operation . . . greater customer satisfaction . . . extra business for Distributors, Dealers and Service Men.

Texaco Capella Oil (Waxfree) has outstandingly low haze and floc temperatures . . . outstanding purity, stability and resistance to oxidation. It's moisture-free, too . . . won't react with refrigerants.

There is a complete line of *Texaco Capella Oils (Waxfree)*. Whatever the type or size of compressor, or whatever the refrigerant, you can assure your customers the finest compressor performance. Available in 55-gallon drums, 5-gallon, 1-gallon, and 1-quart containers — all refinery-sealed.

Put a bigger dollar sign in *your* business. The Texas Company, 135 East 42nd Street, New York 17, N. Y.

TEXACO Capella Oils (Waxfree)
FOR ALL REFRIGERATING AND AIR CONDITIONING COMPRESSORS

Faithfully yours
50
for Fifty Years

TUNE IN . . . TEXACO STAR THEATER starring MILTON BERLE, on television Tuesday nights. METROPOLITAN OPERA radio broadcasts Saturday afternoons.

Circle No. 57 on Reader Service Card for more information

DECEMBER, 1952 • COMMERCIAL REFRIGERATION

THE PRACTICAL REFRIGERATION APPLICATIONS MANUAL

Readers are invited to submit their problems to this department. Each letter of inquiry will be answered personally by the author. All problems should be clearly and completely stated and addressed to: **COMMERCIAL REFRIGERATION AND AIR CONDITIONING**, Manual Dept., 1240 Ontario St., Cleveland 13, Ohio.

Water Cooler Control Solves Freezer Problem

EDITOR:

With reference to your reader who inquires about the application of a deep freezer for a camp refrigerator, I was lucky to hit this one on the head the first try the first time it came up.

I installed a water cooler control in parallel with the original freezer control and came up with a 38-degree cabinet. However, I could still throw the job into fast freeze by throwing on the on-off button of the original control which was left in off position when the high temperature operation was desired.

Also, it is practically impossible to adjust the freezer control to the higher temperatures. In application it finally worked out that the owner left the job on fast freeze for the first couple of hours and then just threw the fast freeze control to off and the machine cycled on the high temp control from then on.

R. R. STORY
R. R. Story & Associates
Jacksonville, Fla.

West Coast Contractor Makes Lens Chiller

EDITOR:

On page 92 of your August issue, we see that you have received an inquiry from an optical company concerning the availability of a refrigerated lens chiller. We wanted to let you know that we also manufacture a unit of this type designed specifically to facilitate separating optical lenses from the pitch blocks on which they are ground.

W. J. ROBINSON
Hugh Robinson & Sons
Los Angeles, Calif.

**BUY FROM YOUR
REFRIGERATION WHOLESALE**

NEW WARREN DEALER IN KNOXVILLE, TENN.

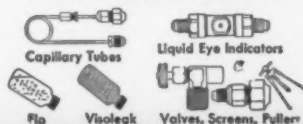
Store Planning Engineers has recently been named distributor of Warren commercial refrigeration equipment in the Knoxville, Tenn. area. Principals in the firm, which was organized last April, are B. H. Dillard and Roy L. Titshaw, formerly sales representatives in the Atlanta area for the L. C. Warren Jr. Co.

Allin Improved LIQUID EYE Indicator

- ceramic eye in tough, high-pressure Pyrex glass magnifies visually when line is full—read at a glance.
- "straight through" design eliminates pressure drop—lighter weight eliminates fatigue in liquid line.
- gasket material impervious to refrigerants—does not decompose or swell.
- glass tube spring mounted; does not touch housing; no danger of breakage—each LIQUID EYE shock-pressure tested before shipment.
- precision built; housing and ends machined to exact tolerances; both ends tightened simultaneously to assure uniform pressure on gaskets and proper centering of glass.

Send for Bulletin WH-51

Ask your Wholesaler for
Allin Practical Products



ALLIN MANUFACTURING COMPANY
1153 West Grand Ave., Chicago 22, Ill.

WATSCO HERMETIC TERMINAL SEALS

STOPS LEAKS

Without Opening Unit

Repair terminal leaks on sealed units easily, quickly and profitably—We have now added a Terminal Seal for SERVEL units.

Pat. No. 2,451,701

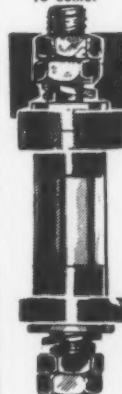


MAKE OF UNIT	PART NUMBER
ADMIRAL	T-300
COLDSPOT	T-300
COPELAMETIC	T-300
CROSLLEY - F12 UNITS TO 1941	T-100
CROSLLEY - 1942 & LATER	T-400
FRIGIDAIRE - TO & INCL. 1937	T-200
FRIGIDAIRE - 1938	T-400
FRIGIDAIRE - 1939 - LATER	T-500
GALE	T-300
GIBSON	T-300
KELVINATOR	T-300
NORGE	T-300
PHILCO	T-300
SERVEL UNIT	T-500
STEWART WARNER	T-300
SCHAEFER CABINETS	T-300
TECUMSEH	T-300
WESTINGHOUSE	T-300

TROUBLE FREE . . . TIME SAVING INSTALLATIONS

WATSCO Hermetic Terminal Seals screw right over original terminal post, sealing leak instantly & permanently in 5 minutes! Instead of removing the unit—work right on the job! Use only ratchet wrench or pliers! WATSCO'S impressive record of repeat orders from service engineers throughout the world speaks for itself! Dependable long time performance is insured by rigidly controlled time testing during manufacture.

Specify WATSCO Hermetic Terminal Seals. SAFEGUARD your job for years to come!



INSIDE REPLACEMENT TERMINALS

FOR SEALED UNITS 3 to a Set

UNIT	PART NO.
COLDSPOT	X-1
CROSLLEY—TO 1941	X-2
CROSLLEY—1942 & Later	X-3
FRIGIDAIRE	X-4
NORGE	X-5
WESTINGHOUSE	X-6
WESTINGHOUSE (Late Models)	X-7
KELVINATOR	X-8
TECUMSEH	X-9
STEWART-WARNER	X-10
SERVEL	X-11

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Write Now for New Catalog No. 17 Featuring our complete line of Parts & Tools.

Available at Your Jobber

Wagner Tool & Supply Corp.
★ REFRIGERATION PARTS & TOOLS ★
40-08 22nd ST., L. I. City, N. Y.

Circle No. 59 on Reader Service Card

and AIR CONDITIONING • DECEMBER, 1952

Circle No. 58 on Reader Service Card



Do the Refrigeration Coils You Use Have Motor Overload Protectors?



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DRIP-PUMP for Condensate on Air Conditioners



The Peerless Drip-Pump solves the troublesome drainage problem—on air conditioners, coolers, refrigerators and other machines where condensate is present—by eliminating hazardous gravity drains altogether! The Drip-Pump lifts condensate up and out, overhead . . . saves valuable space.

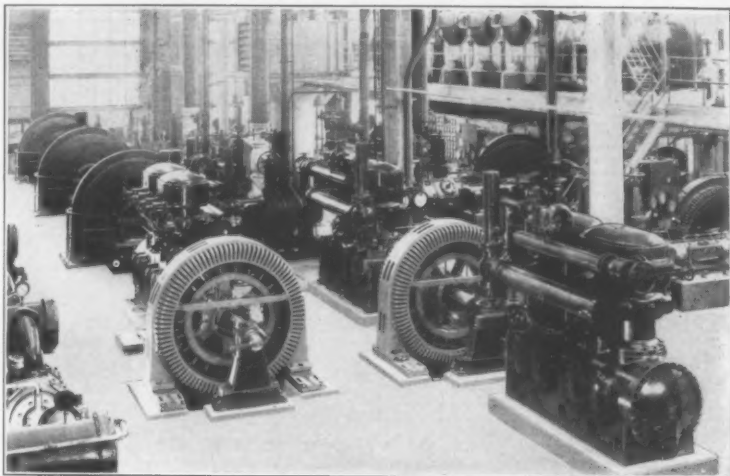
Illustration shows Model DP-2 high capacity high lift pump for air conditioner applications. Also available is Model DP-1 packless centrifugal type pump, driven by "flea-power" motor . . . the ideal pump for use for dome, unit or flash coolers. Both models are ruggedly built for long, hard service; easily and quickly installed. Write for full information.

Peerless of America, Inc.

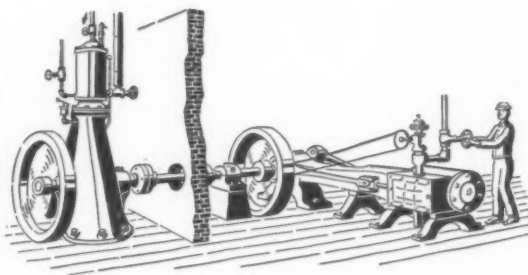
1501 No. Magnolia, Avenue
Chicago 22, Illinois, U.S.A.

Circle No. 61 on Reader Service Card

Frick Company Begins Its Second Century



MODERN INSTALLATION of Frick in the plant of Celanese Corp. near Cumberland, Md., where 6420 hp of refrigeration is used. New Frick vertical compressors have motors of 1250 hp capacity.



THE FIRST Frick refrigerating machine (1882) had an ammonia cylinder mounted on a vertical engine frame, and was driven by a horizontal steam engine.

* * *

Frick Co., one of the pioneers in the field of commercial and industrial refrigeration in the United States, is observing its 100th anniversary in 1953. In observance of this event a Centennial History of the company, illustrated with 200 photographs, drawings and documents, has been published.

The Frick Co. was established in 1853 by George Frick, who started as a millwright in the 1840's, then built steam engines and threshers, and by the 1870's was making sawmills. His business was ruined by the Panic of 1873, but a group of 13 men, one of whom was a younger son, raised \$34,000 to save the enterprise.

By 1884 his company had grown into a net worth of \$900,000, and was building the refrigerating machines which doubled its market.

The company in 1882 began the work with refrigerating machinery which made it a pioneer in this field. About the same time it launched into the building of Corliss steam engines,

in sizes up to 3000 hp. By 1886 packing houses, breweries, and ice plants were installing the new open-type Frick ammonia compressors, driven by Corliss engines.

The first 100-ton ice plant in America was installed at New Orleans in 1888. The ice was formed in huge sheets, each weighing about 5 tons, and requiring a week to freeze.

The largest Frick compressor ever constructed was sold to Armour & Co. in 1896. The parts of this compressor and compound Corliss engine required an entire train of 15 cars for the haul to Kansas City. This giant machine was in continuous service for 35 years, and in occasional use another five. Though it was driven at only 50 to 60 rpm, the compressor was rated at 350 tons of refrigeration.

In 1911 horizontal ammonia compressors were added to the Frick line, and in the 1920's these were developed into a medium-speed machine known as Type J.

In 1923, a greatly improved meth-

od of making clear ice from average city water was introduced. This was called the Frick Pendulum or F-P System, from the motion of the air tubes in the ice cans. Expensive equipment for compressing the air and dehydrating it were made unnecessary by this simple system, which worked at a pressure of two pounds or less. Within a few years more than a thousand installations of the F-P System had been made.

Early Installations Listed

One of the early Frick air conditioning systems was installed in 1910 in a candy factory in Lancaster, Pa. Printing houses and chemical plants were among the first to discover the advantages of air conditioning, outside of the theatres, restaurants, and stores which installed it for human comfort. Today Frick Co. offers several patented air conditioning systems of the central type, in addition to its line of unit conditioners.

The world's largest quick-freezing system—Seabrook Farms at Bridgeton, N. J.—uses over 6000 hp of Frick refrigeration; this operates on the booster or two-stage system, which had earlier been developed by Frick engineers as a means of producing low temperatures with economy.

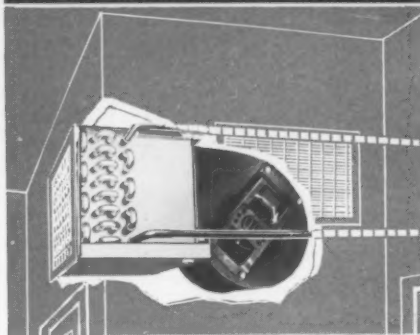
Defense Efforts Cited

In World War II, thousands of refrigerating systems were needed for use aboard ship, in camps, in test laboratories, chemical works, ice plants, powder mills, cold storage, etc., etc. The Frick factory worked night and day to do its part. A huge test laboratory was designed and built for the Army Engineers at Fort Belvoir, Va., where it is still in operation. Numerous other test laboratories are now maintaining temperatures as low as -100 F for such important companies as Bendix Radio, RCA Victor, Lycoming Motors, Goodyear Aircraft, and others.

Outstanding engineering feats of the post-War period include the high-humidity cold storages which keep foods fresh without loss of weight (in spite of 32° temperatures) and the heat-pump systems used in evaporating orange juice before it is frozen.

The latest Frick achievement of national importance is a new method of cooling the reactors in which synthetic rubber is formed.

WHY INSTALL AND INSULATE EXPENSIVE DUCT WORK-TO AIR CONDITION A NEW BUILDING? WHY WRECK AN OLD BUILDING TO INSTALL AND INSULATE EXPENSIVE DUCT WORK?



INSTALL ZONE AIR CONDITIONING AND GAIN THESE ADVANTAGES — HRC UNITS COOL, HEAT, FILTER, VENTILATE, DEHUMIDIFY AND RECIRCULATE THE AIR — SIMPLIFIED PIPING CAN BE USED FOR EITHER COLD OR HOT WATER. ALSO FOR USE WITH FREON

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NOW POSSIBLE WITH

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SAVES 30% PLUS

MAKES POSSIBLE ECONOMICAL AIR
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SIGHT PLACES

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WATER
UNIT

FOR DEPENDABLE SERVICE YEAR AFTER YEAR!

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with
"Grad-U-Matic"
AIR
CONDITIONING
"Lifetime"
PORCELAIN OR
STAINLESS STEEL
EXTERIORS

UL UNDERWRITERS
APPROVED

More and more — hotels, schools, cafeterias and institutions of every type are turning to the famous P-H Line for refrigerators that will stand up and take it, year after year! Choice of 51 Reach-In Models from 20 to 90 cu. ft. capacity — Remote or self-contained. See your nearest P-H Dealer.

Write for illustrated Brochure on Genuine P-H "Lifetime" Porcelain Enamel Finish and "Scratch-Stain" Test.



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REACH-IN AND PASS-THRU CABINETS—BEVERAGE COOLERS—DOUGH
RETARDERS—BAKED GOODS FREEZERS—DAIRY-DELICATESSEN CASES

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and in controls it's Ranco !*

Ranco controls cut a fancy sales figure in the refrigeration industry—*more Ranco controls are in use than any other kind!* Why? Because Ranco controls are available for more than 4,000 replacement installations... because they mean greater customer satisfaction... because servicemen can depend on them to deliver accurate, trouble-free service year after year.

Ranco Inc.

COLUMBUS 1, OHIO



WORLD'S LARGEST MANUFACTURERS OF REFRIGERATION CONTROLS

Circle No. 64 on Reader Service Card for more information

THE SERVICE MAN'S DEPARTMENT

HERE'S HOW!

Systematic Procedures Can Save You Time

You often can save yourself time—and money—if you will adopt and follow a systematic approach to every service call.

It's a lot easier, of course, just to rush right in to the customer's ailing equipment, take one quick look, make a good guess as to what's wrong, patch it up, collect your money, and get out. But that slipshod type of service procedure in the long run will lead inevitably to callbacks and customer dissatisfaction, both of which are detrimental to your business.

Here's a simple suggested outline of procedure which, if followed on

I DO IT THIS WAY

I KNOW that every mechanic is plagued by inside bending springs. Usually the spring slips into the tubing and you have to cut the tubing to reach it.

Well, I do it this way. I cut a small piece (about 1 inch long) of the particular size tubing to fit the spring, and I crimp the tubing. Then the spring goes only as far as the tubing on the spring, and no farther.

Dennis Sylva, Bethlehem, Pa.

every call, will tend to result in efficient, orderly handling of every service complaint:

1. Listen to customer's complaint.
 - a. There is a definite reason you were called.
 - b. Determine how long trouble has existed.
 - c. Do not be afraid to ask questions.
 - d. Show interest in your customer's complaint.
2. Analyze the complaint given by the customer.

- a. Is trouble due to improper design, misuse?
- b. Is it due to changes brought about by service load?
- c. Check against the things customer complained about.
3. Check the operation of the system.
 - a. Use gauges and check compressor efficiency.
 - b. Feel liquid line, suction line, discharge line and evaporator for working temperatures.
 - c. Observe everything carefully for any sort of unexpected symptoms.
 - d. Is motor cool, showing it has been working light or is it hot from overloading?
4. Analyze the symptoms.
 - a. Think of all the possible things that might cause the customer's complaint.
 - b. Don't approach a job with any fixed ideas such as every job needs gas, oil or new metering device.



WANT TO EARN \$5?

You don't have to be a literary genius to pick up a fast five-spot. All you have to do is jot down some of the shortcuts you've developed in your maintenance or installation work and send them to Here's How Editor, Commercial Refrigeration and Air Conditioning. If the Editor votes "yes" on your contribution, your \$5 will be paid promptly when your maintenance tip is published in the magazine. Let's hear from you!

- c. It is not uncommon to find more than one fault causing the customer's complaint.
5. Correct the trouble.
 - a. In most cases it is more economical for both you and the customer to replace a faulty part rather than repair an old part.
 - b. Make sure no additional faults exist.

I DO IT THIS WAY

IF you have trouble removing the friction ring from the original seal on the compressor shaft, here's a tip that may help you. We have found that these rings come off easily if you apply a small amount of heat and then insert a slender piece of metal with a hook under the ring.

H. A. Maberry, Haverhill, Mass.

Doing Something About The "Death Trap" Menace

In a move that certainly merits commendation, the Long Beach chapter of the Refrigeration Service Engineers Society has offered to fix stored refrigerators so that they cannot become death-traps for small children.

The chapter's offer was published in Long Beach daily papers, with requests for this service to be made to police authorities, who would pass the information along to the RSES group for action.

Here is an excellent example of how a local industry association can perform a real public service and avert needless tragedy. The "death trap" menace as far as abandoned or stored refrigerators are concerned has been so widely publicized within the industry that there's probably not a service mechanic worthy of the name who doesn't take the required pre-

PARAGON

DEFROSTING TIME SWITCHES

300 and 300M SERIES

From \$10.50 List



For Commercial Defrosting

Electric Heat • Hot Gas • Compressor Shut-Down

For UNIT COOLERS • WALK-IN BOXES • FROZEN-FOOD DISPLAY CABINETS • LOCKER PLANTS • REACH-IN CABINETS • FUR STORAGE VAULTS

Paragon 300M series offers accurate, easy-to-set synchronous-motored time switches for up to 8 defrost periods per day, of two hours or less.

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MAKERS OF THE FAMOUS

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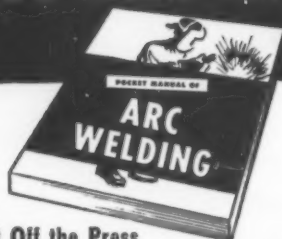
FOR DOMESTIC REFRIGERATORS - ONLY

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Contains 172 pages of practical welding data of value to department heads, supervisors, inspectors and welding operators. Single copies \$1.25 each. Special discounts on orders of 25 or more. Attach check or money order to coupon below.

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Address

City and State

cautions on the equipment he handles personally—but unfortunately service men don't see every refrigerator that's put aside, or stored.

These "outside" instances, we believe, cause most of the tragedies we occasionally read about. A community-wide activity, like the one in Long Beach, is one excellent way to call public attention to this danger, and to do something about it.

Human nature being what it is, however, it's probably necessary to make the safety drive on abandoned refrigerators an annual one. Local newspapers, you'll find, will be glad to cooperate with publicity. It's an opportunity for public service—and for saving lives—that shouldn't be passed up.

CLOSE CONTROL . . .

Continued from page 40

exceeded expectations. The distributor has found that not only has he been able to control the ripening of the fruit at the desired rate, but also that the color of the fruit is considerably improved, and waste due to spoilage or improper ripening has been greatly reduced.

During those periods of the year in which the rooms are not used for tomato ripening they are converted to general storage of all types of fresh produce, and the wide flexibility of this system makes it possible to vary the temperatures maintained according to the types of produce stored. Actually the room was carried for five weeks at 31 F, even though originally it had been designed for a minimum of 35 F.

It also has been discovered that these rooms produce excellent results when used for banana storage and ripening, as temperature and humidity conditions required for this process are nearly identical to those needed for tomatoes. This additionally broadens the original function of these rooms, and provides another "plus" benefit for their owner.

According to Sid Weingart, an executive of the distributing firm, the system actually paid for itself during the first year of operation. He further reports that despite the multiple functions of this room the service required on the equipment has been virtually nil during two full years of operation.

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REFRIGERATOR

DOOR GASKETS

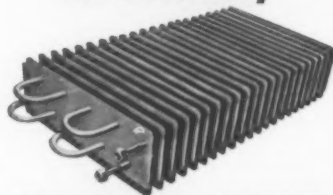
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for Durability



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The refrigeration coil that changed an industry stands today unchallenged for performance, user satisfaction and lasting durability. Made from only the finest materials by skilled craftsmen under exacting standards, every Larkin Coil features imbedded fin-to-tube contact, swaged connection, silfos welded construction, and staggered tubing. Write for complete details.

Manufacturers of the original Cross-Fin Coil — Humi-Temp Units — Evaporative and Air Cooled Condensers — Air Conditioning Units and Coils — Direct Expansion Water Coolers — Steel Vacuum Plate Coils — Heat Exchangers.

WATCHDOG OF THE NATION'S FOOD SUPPLY

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(Classified Advertising)

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WANTED PLANT SUPERINTENDENT for plant employing 200, New England area. Must have thorough knowledge of metal fabrication. Take complete charge of manufacturing and personnel. Excellent future with growing company for right man. Salary commensurate. Submit complete resume in initial correspondence. Applications in strict confidence. Write Box No. 12252, Commercial Refrigeration and Air Conditioning.

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High quality, British made thermal insulation material ideal for frozen foods, cold stores, refrigeration transportation, etc. Warehoused and distributed in America by New York corporation. Exclusive territories available. Write giving complete particulars and background. Box 12152, Commercial Refrigeration and Air Conditioning.

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Course on sealed unit rebuilding trade secrets disclosing exclusive methods for all operations. \$12.50 or write for details. H. Custer, Box 98, Center Line, Michigan.



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Successful methods of treatment make it more important than ever to find the 150,000 "unknown" cases of tuberculosis—and to find them early.

Mass X-ray campaigns to find TB in time are part of the work your Christmas Seal dollars help support.

Remember, no one can be "cured" until treated . . . and no one can be treated until the disease is discovered.

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The HARRY ALTER CO.

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ICE-X
Distributor

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AUTO-LITE

... for
Temperature Indication



Model F-1
temperature indicator

3-way
adjustable
mounting



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INSTRUMENT AND GAUGE DIVISION
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YOU THE ANSWERS TO ALL YOUR
REFRIGERATION PROBLEMS...
SO NOW YOU CAN WORK ON THESE
LITTLE PROBLEMS FOR THE NEXT
MONTH. I'M TAKING A
VACATION!



J. A. CORNACK

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HERE'S THE INSIDE STORY...

why water regulating valves always stay clean... even in dirty water

V-block seals water in main valve body. Water never comes in contact with spring or operating bellows. Leakproof forged-brass body.

Plastic valve shoe floats on stem. Water pressure forces shoe tightly against seat for complete shutoff. No chatter in operation.

Valve Seat is wiped clean on each cycle by unique action of shoe as it moves across orifice. No chance for dirt to accumulate on seat.

Stainless steel, corrosion resistant valve seat, ground to fine surface finish, provides lifetime tight shutoff and long wear.

CHOICE OF 2 TYPES

Model 65 water-regulating valve for Freon 12. Pressure range 65 to 200 psi.
Model 65H, for Freon 22. Pressure range 165 to 300 psi.



Both units available in $\frac{1}{2}$ ", $\frac{3}{4}$ " and $\frac{1}{2}$ " sizes. Capacity, both units, from 7.2 to 42 gal. per min.



DEPENDABLE
Controls

HERE is a water-regulating valve that provides an entirely new idea in flow control for water-cooled compressors and condensing units.

The exclusive, floating plastic valve shoe and stainless-steel seat provide a combination that is absolutely self-cleaning. Aided by the water pressure, it provides trouble-free, positive shutoff — without water hammer, and unaffected by dirt, lime or sand.

The rugged, forged-brass body construction provides durable, corrosion-resistant service. An extra-strong, two-ply bellows also contributes to longer life.

Use this outstanding valve on original equipment or for replacement service. You can't beat its long life and economy. Choose either of two types, in 3 sizes . . . for Freon 12 or Freon 22, as indicated at left. Regulates cooling water for compressors up to 42 hp.

Write today for Bulletin R-18 and get more information on the valve that *stays clean — even in dirty water.*

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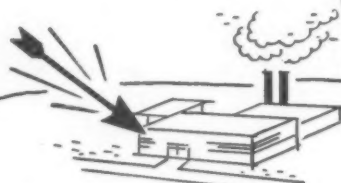


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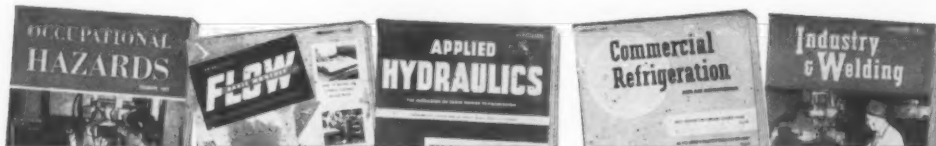
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